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Report**



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AN ANALYSIS OF COPING BEHAVIOUR
IN PRISON INMATES

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Prefatory Note

This document is the final report for a contract between Queen's University and the Department of Supplies and Services, acting in behalf of the Corrections Research Section of the Ministry of the Solicitor General of Canada. The work specified was a research project on how penitentiary inmates cope with the world.

As principal investigator, I was nominally responsible for the research. However, is it not easy to do research in a penitentiary system, and this project could not have been done without the assistance of many other people.

Most of all, credit should be given to my coworkers on the study. The great majority of the interviewing was done by Julia Kalotay, who managed to get inmates to reveal to her things they had never told anyone else, and who almost invariably maintained a strong empathy for our subjects even while sorting out the truth from the prevarications.

Frank Porporino deserves half of the credit (well... 49%) for executive decisions in the study. The conception and design of the study were done jointly while he was a graduate student at Queen's, and his Ph.D. thesis opened the path for many aspects of the work reported here. He has maintained a support role far beyond the call of duty since he emigrated to Ottawa.

The formidable tasks of recording and organizing the data could not have been accomplished without the help of George Klima, who managed to maintain a sanguine demeanor even when bits and bytes were exploding all around us.

The four of us comprised the basic team which conceived, proposed, designed, pretested, redesigned, and, finally, carried out this research. Basic decisions were mostly a joint responsibility. However, I alone am responsible for the errors in the final report, as well as the trenchant wit, if any remains after editing.

Several other people assisted at various points in the course of the project. Debra Jared deserves credit for outstanding competence in a clerical role far below her ability. Also, I would like to thank Marcia Cardamore, who paid the blood price for us all.

In addition to those who worked directly on the project, we were dependent on the assistance of many other people, especially those in the Research Section. I would like to thank Hugh Haley, who encouraged us to submit the original proposal, and Helen Durie, who helped us to carry the work through its early stages. We also owe much to John Evans, who continued the support and assistance from Ottawa.

We were helped by several people in the regional and national administration of the Correctional Service of Canada, including the Regional Director, Arthur Trono, the Regional Coordinator of Offender Programs Ian Blackie, the Regional Director of Medical Services, Dr. Brennan and the Director of Psychological Services, Bob Watkins. Without their cooperation, we might not have been able to accomplish our objectives.

It also goes without saying that we are especially grateful to all of those working in the institutions who helped us. Particular thanks are due to psychologists Bob Cormier, Gareth Hughes, Louisa Gembora, and Bill Palmer who coordinated interviews and helped to circumvent obstacles in their respective institutions. Several clerks were also very helpful, especially Alice Gay, Muriel Willing, Marg McCracken, June Bryans, and Cathy Rose. We will miss their company and their stories of life in the joints.

Finally, we owe much to the 133 people who served as subjects in this study. They gave us their time, although most had a lot more than they wanted, but they also talked freely about their lives and how they saw the world. I hope that the results justify the efforts they made to assist us, and the investment of their trust.

The work described here began with a letter of inquiry in 1977, so it has taken over six years from conception to completion. For much of that of time it occupied a central place in our lives, through crises large and small, and from high excitement to mindless tedium. At times it felt as though we were going through an exercise in coping, rather than investigating how others coped. Still, its completion may leave a gap in our lives, which we will have to cope with somehow or other.

E.Z.

Cambridge, England

December, 1983

"No mind is much employed upon the present; recollection and anticipation fill up almost all our moments."

Samuel Johnson

"The past is dead. If I think about it will kill me too."

Inmate subject XXX

"How often do I think about the future? If I get through this day, I have 5,000 more exactly like it ahead of me. I just try to survive each hour."

Inmate subject YYY

INTRODUCTION

The Problem

It is a truism that imprisonment is a stressful experience. Evidence of the overall effects of such stress is easily seen.

For example, suicide rates among prisoners are several times that of the general population (Austin and Unkovic, 1977; Burtch and Ericson, 1979; Sylvester, Reed and Nelson, 1977; Topp, 1979). Between the years 1970 and 1983, a total of 141 suicide deaths were officially recorded in Canadian penitentiaries, indicating a risk roughly three times that among males of comparable age in the general population. Accurate estimates of the frequency of attempted suicides in prison are not obtainable, but direct experience in Canadian institutions indicates that it is several times the number of actual suicides. It is also generally agreed that acts of self-mutilation are endemic in prisons (Ross and McKay, 1979; Toch, 1975); other settings report no comparable behaviors.

Other evidence shows a variety of emotional and physical problems among inmates. Stress-related complaints and many physical disorders are much more common than in the general population (Heather, 1977; Jones, 1976). Prisoners report more sleeping problems, more headaches, and greater fears of nervous breakdowns (D'Atri, 1981). Levels of anxiety are substantially higher for an inmate sample than those from other groups (Spielberger, Gorsuch and Lushene, 1970). As a result, the frequency of tranquilizing medication is also high (Workman and Cunningham, 1975).

Not only are these risks apparent for inmates, but they also present problems for prison staff. On a routine basis, staff must deal with prisoners who become intensely emotional, demanding, or destructive to themselves and others. Some inmates withdraw into states of apathy, depression and hopelessness (Hokanson, Megargee, O'Hagen, and Perry, 1976). Others adopt patterns of self-defeating rebelliousness or persistent violation of basic institutional rules (Toch, 1969).

In recent years, violence in prisons has been a topic of great public concern. There is evidence that both the rate and the severity of violent assaults have been increasing (Bowker, 1980; Irwin, 1980). Calculated over

the five-year period from 1979 to 1983, the homicide rate in Canadian penitentiaries was roughly 20 times that among males of comparable age in the general population. This rate is considerably higher than recent rates reported by most U.S. jurisdictions (Hunzeker, 1983).

The significant management problems in prisons are reflected in the numbers of inmates who must be maintained under special conditions. Increasingly large numbers of prisoners are choosing to serve their time in protective custody, either for protection from violent attacks or because of an inability to deal with the stresses of most institutions. As of the end of 1983, close to 10% of the Canadian penitentiary population was being held in protective custody. At the same time, a substantial number of prisoners were involuntarily segregated because of violent or disruptive behavior. Almost 6% of the population was being held either in punitive dissociation or in a supermaximum security Special Handling Unit. With the recent upsurge in the number of Canadian penitentiary inmates, and consequent crowding, these management problems are bound to be exacerbated.

The evidence is thus overwhelming that a large proportion of inmates react maladaptively in prison. In a sense, this should not be surprising, since most of them have behaved maladaptively on the outside; indeed, some of the behaviors described above are the same as those for which many inmates were sentenced. Still, the concentration of those with previous problems in a prison population often leads to an exacerbation. And, in any case, the behaviors described above present great difficulties in institutional management, as well as the dilemma they create for public policy regarding the correction of criminals. These patterns of maladaptive behavior create situations that are persistently and chronically difficult to manage and control, and they impede attempts at any sort of rehabilitative or correctional programming.

At the same time, it is apparent that the majority of inmates do manage to adjust and conform reasonably well to the conditions of their imprisonment. What sets apart those who deal easily with imprisonment from those who fall into patterns of maladaptive behavior? The answer is not easily seen.

For years, investigators in corrections have sought to identify those factors which determine offenders' reactions to imprisonment. The adverse

conditions and deprivations of imprisonment have been subjectively recorded in compelling fashion by numerous writers (e.g., Abbott, 1981; Alper, 1974; Caron, 1978; Clayton, 1970; Manocchio and Dunn, 1970; Pell, 1972; Speer, 1977). Sociological studies have described, substantiated, and disputed theories about prisoners' adoption of subculture norms, attitudes, and roles (Bowker, 1977; Clemmer, 1940; Cressey, 1961; Sykes, 1966; Thomas and Peterson, 1977; Zingraff, 1975). Attempts have been made to compare the impact of imprisonment in different countries (Akers, Hayner and Gruninger, 1977) or even to simulate the experience of confinement to examine the effects (Haney, Banks and Zimbardo, 1973). Sophisticated methodology has been applied in developing measures to assess general characteristics of prison environments (Moos, 1975) and the types of concerns which prisoners express (Toch, 1977).

Yet, from an applied perspective it is clear that we remain at a loss in either predicting or effectively preventing maladaptive responding to imprisonment. As noted in a comprehensive review on the effects of imprisonment (Mckay, Jaywardene and Reddie, 1977, p.43):

There is a lack of any obvious stable, clear predictive or postdictive factors linking any particular individual with adaptive or maladaptive adjustment. Furthermore, the identification of successful and unsuccessful strategies adopted by those who experience long-term confinement is far from complete. At the current state of our knowledge the lack of understanding regarding appropriate mechanisms for coping with these circumstances is, and should be, of considerable concern to us all.

The elucidation of how individuals react to the conditions of imprisonment would have several important uses. Since prison represents one particular environment, rather more uniform than most, knowledge of how inmates respond to the situations they experience in prison would be a significant step toward a more general understanding of how people cope with their environments. It should therefore be a theoretical problem of some general interest.

Such information would also be of great practical importance. If prisons are to be used for any purpose other than one of some presumptive

punishment, we must know better how they affect people. Such an understanding would not only have major implications for the orderly and humane management of institutions, but it is a basic prerequisite for the design of more effective attempts to change offenders.

In the last few years, the rates of crimes in many categories have increased significantly in Canada (Department of Justice, 1982). Rates of imprisonment have also increased steadily, and show no signs of leveling off (Mullen, Carlson, and Smith, 1980). From the end of 1980 to the end of 1982 the male penitentiary population increased by 16%. Similar increases are seen in other Western countries.

At the same time, the purpose and aims of the penal system have become confused. The agreement on the value of rehabilitation among politicians, correctional workers, and the public has been lost. Whether this is because of the poor performance of rehabilitation programs which has been repeatedly demonstrated (Bailey, 1966; Lipton, Martinson, and Wilks, 1975; Sechrest, White and Brown, 1979) or because of an unrelated swing toward political and social conservatism, a more punitive approach toward offenders is being widely touted as a solution for the problem of increasing crime. Yet, such an approach has never worked in the past to reduce crime rates.

Until we begin to understand how prisoners are affected by imprisonment, there will be no way out of the current morass. Until we begin to understand how imprisonment can be made to change individuals for the better rather than damage them, our society will face a problem of undiminished magnitude. If prisons are to contribute to the goal of controlling and preventing crime, and if they are to become more humane in their functioning, we must be able to predict the impact which imprisonment will have on individuals.

This project was undertaken as an analysis of the reasons why individuals succeed or fail to cope with the stressful conditions of imprisonment. As such, it represents a first step in dealing with the problems described above.

Previous Work: Deprivation and Importation Models

Many aspects of the present approach can best be presented in a critique of previous work. This section will therefore deal with a selective review of studies in the published literature.

Much of the literature is concerned with the causes of the group behavior of prison inmates. Most of these studies derive from the sociological concept of "institutionalization", with the assumption that the most important determinant of inmates' behavior is the social environment in prison.

The literature on how individuals adapt to imprisonment is dominated by sociological analyses of prisoners' adoption of subculture norms, attitudes, and various institutional "argot" roles. Early field studies provided detailed descriptions of the emergence of an informal social world within the prison environment (Clemmer, 1940; Irwin & Cressey, 1962; Morris & Morris, 1963; Schrag, 1944; Sykes, 1958). The prison social world has its own social-class hierarchy, and its own language, economy, and set of rules governing behavior. From a functional or systems perspective which was then emerging within sociological theory, the prison social world was viewed as having a pervasive influence on the behavior of inmates. It was interpreted as the central collective solution to the peculiar problems and "pains of imprisonment". The early descriptive studies thus provided a broad framework for the study of inmate adaptation. The general process of assimilation into the prison social world has since been the subject of considerable research and theoretical analysis.

Clemmer (1940) coined the term "prisonization" to describe the process of assimilation into the prison subculture. He defined it generally as "taking on in greater or lesser degree the folkways, mores, customs and general culture of the penitentiary" (p. 299). Prisonization functioned to insure the stability and vitality of the prison subculture. At the individual level, it served as the primary means of adapting to imprisonment.

Although the concept of prisonization has been operationalized and measured in different ways, in one form or another it has been used as the primary outcome measure in sociological studies of adaptation to imprisonment. Two major theoretical perspectives have emerged in seeking

to explain the determinants of prisonization. These have been described as the deprivation and importation models of prisonization (Thomas & Peterson, 1977).

The deprivation model emphasizes intra-institutional pressures and problems generated by the actual experience of imprisonment (Sykes, 1958; Sykes & Messinger, 1960). It essentially maintains that prisonization is the consequence of "the depersonalizing and stigmatizing effects of legal processing and induction into the prison, coupled with the alienative effects of the coercive power exercised by prison officials in the attempts to maintain social control within the prison". (Thomas, 1977, p. 137). Studies based on the deprivation model have examined the relationships between prisonization and such factors as:

- a) the length of time incarcerated and the time remaining to be served (Akers, Hayner, & Gruninger, 1977; Atchley and McCabe, 1968; Clemmer, 1950; Garabedian, 1963; Glaser, 1964; Troyer & Frease, 1975; Wellford, 1967; Wheeler, 1961);
- b) interpersonal involvements and the social role assumed by the inmate (Garabedian, 1964; Schrag, 1961; Sykes & Messinger, 1960).
- c) type of institution and organizational structure (Akers et al., 1977; Berk, 1966; Cline, 1968; Street, 1965);
- d) the degree of alienation or powerlessness experienced by the inmate (Thomas & Poole, 1975; Thomas & Zingraff, 1976; Tittle & Tittle, 1964); and
- e) changes in life satisfaction of the inmate (Thomas, Peterson, & Zingraff, 1978).

In contrast, the importation model criticizes the deprivation model's closed-system emphasis on prison-specific influences. Instead, it highlights the effects that preprison socialization and experience can have on the types of adaptation that inmates will make to prison life. Within the importation model, the degree and duration of involvement with criminal value systems prior to imprisonment, and the various attitudinal and behavioral patterns that the inmate brings with him to prison are regarded as the most important determinants of adaptation (Irwin, 1970; Irwin &

Cressey, 1962; Thomas & Peterson, 1977). Preprison factors that have been related to prisonization include:

- a) general social history factors such as age, race, educational attainment and pre-offence socioeconomic and employment status (Alpert, 1979; Jenson & Jones, 1976; Schwartz, 1971; Thomas, 1977);
- b) variables reflecting the individual's history of criminal involvement such as the number of prior convictions and the number and length of prior incarcerations (Alpert, 1979; Wellford, 1967; Zingraff, 1980);
- c) identification with criminal values and attitudes towards the legal system (Thomas & Poole, 1975; Zingraff, 1975);
- d) the self-concept of the individual (Faine, 1973; Hepburn and Stratton, 1977; Tittle, 1972); and
- e) identification with broad social, political, racial and religious ideologies (Irwin, 1980; Jacobs, 1976).

Until recently, the deprivation and importation models were regarded as competing explanations of the prisonization process. Studies have now moved in the direction of a more reasonable integrative or interactive model that considers both prison-specific and preprison factors (Alpert, 1979; Thomas, 1977; Thomas & Petersen, 1977; Zingraff, 1980). These more recent studies have also emphasized the role of various extraprisson factors such as the post-release expectations of the inmate, and the degree and quality of contact with the outside community (Alpert, 1979; Thomas et al., 1978; Zingraff, 1980). However, the preoccupation with the general notion of prisonization in accounting for adaptation to imprisonment has continued despite some fundamental methodological and conceptual problems.

In Clemmer's original formulation, prisonization was hypothesized to be a direct function of the amount of time served. Wheeler (1961) later argued that prisonization followed a curvilinear pattern (i.e., it increased from the initial to the middle phase of the inmate's sentence and then began to decrease as the inmate neared release). Subsequent studies have been inconsistent in their findings (Atchley & McCabe, 1968; Troyer & Frease, 1975), and the nature of the relationship between time served and the process of prisonization remains unclear (Bukstel & Kilmann, 1980).

Studies that have examined the many other suggested determinants of prisonization have been similarly inconsistent; various studies indicate that different factors are more or less important as predictors of prisonization (Bowker, 1977; Thomas & Petersen, 1977). Moreover, in terms of the criterion of variance accounted for (e.g., in regression studies using multiple predictors), the studies to date that have attempted to predict differences on measures of prisonization have been fairly unimpressive. For example, Zingraff (1980) was able to account for only 22% of the variance using a variety of both deprivation and importation model factors to predict scores on a measure of prisonization. Similarly, Thomas (1977) was able to account for only about 19% of the variance in prisonization scores.

There are several reasons for the lack of significant progress in understanding adaptation to imprisonment from a prisonization perspective. Methodologically, the studies in the area can be criticized for using different and possibly unrelated indices of prisonization (e.g., nonconformity with staff expectations, commitment to inmate solidarity, adherence to prescriptions of the inmate culture). Many studies have also failed to establish the reliability or internal consistency of their measures (Poole, Regoli, & Thomas, 1980). Prisonization has been exclusively assessed using self-report measures. However, the possible effects of acquiescence and social desirability response biases that are known to influence self-report measures have not been determined. A further major inadequacy has been the paucity of longitudinal analyses of prisonization, most studies having relied on simple correlational or cross-sectional designs (see below).

However, the research on prisonization can be even more seriously criticised on conceptual grounds. Although possibly of some value as a global theoretical construct, as a criterion measure of adaptation, prisonization is clearly too general and too crude a concept. It is entirely possible that inmates who are equally "prisonized" may nonetheless vary on other meaningful indices of adaptation. Indeed, prisonization may be of only superficial relevance in understanding adaptation. In order to begin to understand the factors that influence adaptation, studies must focus on more specific outcome measures. In particular, specific behavioral indices and measures of emotional states should be examined as

criteria of adaptational outcome in prison.

Interactions in Behavior

The above review makes it clear that conflicting findings have led to considerable debate over the validity of different models. Yet none of the models above considers how particular aspects of the environment will affect individual inmates, or how individuals with different personal characteristics will react to particular conditions and situations. These omissions are critical ones.

In a few cases, we expect that behavior would be uniquely determined by environmental conditions. For example, a total lack of food ought to lead to food-seeking behavior in every intact individual. Similarly, we can predict that a totally blind person will fail to react to any visual cue. However, most of the time there are few attitudinal or behavioral dispositions that are so powerful as to uniquely determine actions in all situations, and few environmental events which can compel identical responses from people of every disposition.

In general, we would expect that the interaction between individuals and situations would be the most powerful determinant of behavior. Yet, most previous investigations have ignored this interaction.

In order to take account of both individual and situational factors in determining the behavior of prison inmates, one must study the ways in which individual inmates perceive and react to specific events and conditions while they are imprisoned. Environmental factors should be seen as stimuli whose behavioral impact depends on how they are appraised and processed by the individual (Bowers, 1973; Mischel, 1973). Similarly, individual dispositions will express themselves in terms of varying appraisals or responses when faced with a particular environmental event.

As an example of how differences in cognitive appraisals regarding imprisonment can underlie differences in behavior, consider two individuals who are faced with long sentences in a penitentiary. Both experience similar degrees of anticipatory stress and are mobilized to deal with the problem. However, as a result of his individual history and attributes, e.g., acquired beliefs, reinforcement history and innate capacities, one person believes that the events which will occur in prison are beyond his

control. Thus, he interprets his inability to control his environment as the result of his own inadequacy. In contrast, the other individual experiences the same lack of control, but interprets the situation as one where others have used and abused him and are continuing to do so. It is likely that the first person will sink into depression, apathy and withdrawal; the second is more likely to become resentful, angry and rebellious in an attempt to strive against control by others, even if it exacerbates his situation.

Similarly, the way in which the same individuals actually deal with their long sentences will also determine how they are affected by the environment. Suppose that one individual deals with the stress of the long confinement he faces by avoiding all thoughts of the future, while the other prisoner strives to ameliorate his condition by reaching a safe and comfortable position within the institution. The first person will likely immerse himself in the inmate social network and may become highly prisonized; he will also be seen as acting generally impulsively. The second inmate will probably seem much more rational and controlled, with much weaker ties to the inmate subculture. These behaviors will affect the ways the individuals are seen by both staff and other inmates, they will also affect emotional responses, and they will eventually affect subsequent behaviors. For example, the nature of involvement with other inmates may affect the type and frequency of disciplinary infractions.

Coping Theory

The emphasis on the interaction between persons and events is far from unique here; indeed, it is arguably becoming the predominant point of view in contemporary psychology, and fits very well with the rebirth of scientific interest in the nature and role of cognitions. Most of the ideas above are embodied in the contemporary literature on the nature of coping.

The single best articulated theoretical framework for the study of the coping process is that of Lazarus and his associates (Lazarus, 1966, 1980; Lazarus, Averill and Opton, 1974; Lazarus and Launier, 1980). Much of this theory is central to the approach taken in the present study, so it will be discussed in some detail. The above discussion stresses the general

interaction between environmental events and individual characteristics. When attempting to predict maladaptive behavior, the focus of attention is on responding to potentially harmful environmental events, i.e., stressful events. Lazarus argues that there are several processes which occur in the process of an individual dealing with a stressful event.

First, there must be some potentially difficult situation one which threatens the safety or comfort of the individual, either physically or psychologically. When such a situation occurs, it will come to the person's attention and mobilize behavior. However, a stimulus alone does not constitute a threat. Rather, it first must be evaluated or appraised in terms of its significance to some aspect of the person's well-being, the first stage in the coping process. Lazarus has labelled this "primary appraisal". The process of primary appraisal can result in the individual acknowledging and responding to a problem; alternately, the individual may appraise the situation as harmless or irrelevant to his well-being, thus eliminating the need for action. Thus, a situation must be appraised as threatening before it will evoke coping behavior, and, in general, appraisals of the intensity and significance of threat will influence subsequent responding.

Having appraised an event or situation as threatening, the individual must also decide whether he can master it successfully. This is the second stage in the coping process. Lazarus uses the term secondary appraisal to refer to the individual's evaluation of the coping resources and options available to him (e.g., his expectations of competence or efficacy in dealing with the situation). These appraisals of one's options and resources are arrayed psychologically against one's primary appraisal of the situation in determining the degree of overall threat (or challenge) that is experienced.

It should be noted that the terms primary and secondary appraisal are not intended to denote relative importance or temporal ordering. The two forms of appraisal are seen as clearly influencing each other, secondary appraisal directly mitigating or enhancing the sense of threat that results from primary appraisal. In this regard, Lazarus has specified the process of reappraisal which may occur upon further reflection or evaluation of the situation, or as a result of feedback from one's coping efforts.

Finally, we would expect the person to respond to the threatening situation in some way. The responses will depend on the appraisals of the situation, but they must be chosen from the sets of responses which are available to the individual. We shall designate the set of behaviors (either overt or covert) which occurs in response to an appraised threat as "coping responses" or "coping behaviors". The stages of appraisal and responding comprise the coping process.

Individuals may vary considerably in the kinds of coping behaviors they adopt. For example, they may choose to reduce intense arousal by periodic disengagement from stressful situations (physical avoidance or fantasy); they may become adept at inhibiting emotional responses (denial or distraction); or they may try to approach the situation as a problem to be solved, weighing alternatives and deciding on the best course of action.

Not only will the responses vary, but wide variation can also be expected in the effects that different coping behaviors will have on a situation. Some behaviors may resolve difficulties, some may avoid them, some may affect one's feelings and leave the problem untouched, some may have no useful effects, and yet others may exacerbate existing problems. One must certainly consider the effects of coping responses, since at any point they determine the subsequent situation which the person must deal with.

Lazarus' conceptual analysis of the coping process provides a comprehensive and integrated framework for guiding the study of coping. The framework is based on the premise that emotions and behavior are outcomes of the interaction between external situation characteristics and personal characteristics (Magnussen & Endler, 1977; Mischel, 1973). In accounting for behavior under stressful environmental circumstances, research which does not consider the interaction of environmental and individual characteristics will obscure important relationships.

Among the possible cognitive determinants of coping, generalized beliefs about oneself and the environment (Bandura, 1977; Ellis, 1962; Lazarus, 1966; Rotter, 1966), and the type or strength of values or commitments (Folkman, Schaefer, & Lazarus, 1979; Klinger, 1977) may be particularly important. These dispositional factors can be seen as rendering the individual particularly vulnerable to given stressful

circumstances. For example, a strong commitment to succeed within the occupational sphere can make an individual feel persistently threatened by the prospect of poor performance or failure (Glass, 1977). Individuals who tend to perceive settings as hostile or dangerous and who feel inadequate about their resources for mastery, may be generally prone to feel threatened and react with intense anxiety or aggression (Toch, 1969, 1975).

Thus, the coping process is influenced by trans-situational, generalized cognitions, as well as by situation-specific appraisals. In this regard, the Lazarus model is more general than other formulations that have emphasized the role of cognitive processes in mediating responses to stressful situations. The model can easily accommodate these various formulations. In particular, Lazarus' notions of secondary appraisal of coping resources and options can be regarded as subsuming two distinct types of appraisals that have received considerable attention in the recent psychological literature.

The first is that of perceived control which is an extensively researched concept that originated within Rotter's (1954, 1966) social learning theory. There has been considerable debate regarding the causes of perceived uncontrollability and the exact nature of the relationship with such emotional consequences as depression or anger (Abramson, Seligman & Teasdale, 1978; Garber, Miller, & Seaman, 1979; Miller, 1979; Wortman & Brehm, 1975). Nonetheless, perceived control has consistently been found to be an important mediator of the effects of stressful situations (Averill, 1973; Glass & Singer, 1972; Lefcourt, 1976; Phares, 1976).

The second type of appraisal which also fits nicely under Lazarus' notion of secondary appraisal is that of personal efficacy expectancy (i.e., the belief that one can personally master a situation or circumstance). In an important theoretical analysis of the notion of self-efficacy, Bandura (1977) has postulated that efficacy expectations determine the initiation, degree, and persistence of coping efforts. He has argued that efficacy expectations account for the effects of various psychological treatments, and has supported his theoretical formulation through experimental analysis (Bandura & Adams, 1977; Bandura, Adams & Beyer, 1977).

Efficacy expectancy can be seen as an overall appraisal that is made

by the individual regarding the potential effectiveness of available coping resources and options for dealing with a stressful situation. An individual with high efficacy expectancy may be more likely to initiate problem-solving coping behavior and to persist until a positive outcome is achieved. On the other hand, an individual with low efficacy expectancy may seek to ignore, avoid, or tolerate a stressful situation, and if these efforts fail, risk being overwhelmed by the situation. The magnitude and consistency of efficacy expectations across situations may therefore be an important determinant of adaptational outcome.

Coping and Imprisonment

A number of studies have investigated the ways in which individuals cope with stressful situations, and they have shown clear differences in the general strategies that are used. Moreover, some sorts of coping responses seem more effective than others in dealing with particular sorts of stressors. For example, in preparing for the unpredictable results of life-and-death surgery, a vigilant approach involving attempts to achieve mastery by seeking information may be initially less successful than simple avoidance and denial of the possibility of complications (Cohen and Lazarus, 1973). Distorted perceptions of reality through denial and rationalization have also been shown to be effective for individuals awaiting enemy attack in a war (Bourne, 1971) and in parents of terminally ill children (Wolff, Friedman, Hoffer and Mason, 1964). On the other hand, in stressful situations where the individual clearly perceives the possibility of having some effect on the outcome, acceptance of reality and efforts directed at solving the problem may be the most effective sort of coping response (Anderson, 1977).

As with other individuals encountering stressful situations, prisoners undoubtedly differ in their expectancies, attributions and beliefs regarding imprisonment, in their appraisals of themselves and their environment, and in the repertoire of responses which they have available. These differences should lead to a variety of distinct coping behaviors employed to deal with what they see as the stressful aspects of imprisonment.

Recently, several studies have examined prisoner's perceptions of the

psychological stresses in their situations: for example, differences in the types and severity of problems perceived at various stages of a life sentence have been investigated (Richards, 1978; Flanagan, 1980). Extending the work of Moos (1975), who developed the Correctional Institutions Environment Scale, Hans Toch (1977, 1979) has done the most extensive work in mapping out prisoners' perceptions of their environment. Toch has identified seven salient dimensions: privacy (from irritants such as noise and crowding), safety (from attack), structure (stability and consistency), support (services that facilitate selfimprovement), emotional feedback (being appreciated and cared for), activity (occupying one's time with events), and freedom (from circumscription of one's autonomy). Toch's research has shown that prisoners differ in their appraisals of their environment and that these differences are meaningfully related to various personal characteristics, length of sentence, criminal justice experiences, and amount of time served.

Toch has pioneered the study of underlying psychological processes in understanding the behavior of prisoners. He has made important contributions in detailing the peculiar psychological appraisals and coping behavior of violent prisoners (Toch, 1969). He has also presented a useful analysis of how individuals cope with major crises during imprisonment, and has described the psychological characteristics of particularly vulnerable prisoners who suffer intense breakdowns (Toch, 1975). A few other descriptive analyses of prisoners' psychological appraisals have appeared. For example, Flanagan (1981) has documented some unique psychological coping strategies that are adopted by long-term prisoners, and Gibbs (1982) has described the coping problems of individuals who are being detained pending disposition and trial.

The findings from this research suggest that the psychological processes of appraisal and coping are indeed relevant in understanding differences in adaptation to imprisonment. The present research approaches the study of adaptation to imprisonment from a similar perspective.

This approach raises a great number of interesting questions to which answers are lacking, especially in the context of imprisonment. We do not know what behaviors individual inmates use to cope with events. We do not even know whether coping really relates to a person's success in avoiding

the consequences of stressful situations. Although a considerable clinical literature rests on the assumption that inadequate coping leads to maladaptive behavior, we have little direct evidence that this is the case in any situation, above all in prison. In the particular case, we do not know how coping with conditions in prison relates to an individual's coping on the outside. These are among a host of unknowns.

The prison setting is in many ways ideally suited to the study of the coping process. Faced with a great variety of demands, deprivations and differences from outside life, an inmate must make important coping decisions from the outset. For example, should one seek to become integrated in the prison subculture or isolate oneself from it? Should one avoid thinking about problems or attempt to anticipate their occurrence? Ought one to maintain contact with the outside? How does one manage boredom, anger, depression and loneliness? Should one live day by day or make plans for the future?

An evaluation of how prisoners cope could also have major implications for understanding the causes of criminal behavior. There is already evidence to suggest that criminal behavior may be related to deficits in interpersonal coping skills (Little and Kendall, 1979). Criminal behavior has also been associated with poor interpersonal problem-solving (Sarason, 1978; Spivack, Platt and Shure, 1976) egocentric social perception (Chandler, 1973; Jurkovic and Prentice, 1977) irrational and distorted belief systems (Yochelson and Samenov, 1976) and a concrete, present-oriented, impulsive style of thinking and acting (Blanchard, Bassett, and Koshland, 1977; Glueck and Glueck, 1950; Kipper, 1971; Landau, 1976).

All of these can easily be integrated into the comprehensive model of coping outlined above. It is assumed that deficiencies in coping with the problems of daily life will likely lead to maladaptive behavior; it is reasonable to suppose that such maladaptive behaviors will include criminal acts. We therefore expect that most inmates will have shown problems in coping prior to their imprisonment.

Indeed, it can be argued that inadequate coping is the principal cause of criminal behavior for many offenders. Such a claim is well beyond what can be established in this study. However, it should be noted that the coping model may have some powerful implications for theories of the causes

of crime, depending on the strength of the links which can be empirically established.

Changes Over Time and the Longitudinal Design

For several reasons, this study also included comparisons across time. In the first place, simply measuring coping is insufficient to establish the usefulness of the model. Since it is assumed that coping determines the nature and quality of later adaptation, it is essential to relate coping on one occasion to subsequent behavior. We therefore need to examine the relationship between measures of the coping process and measures of adaptation taken later.

Secondly, one would expect that some changes in behavior will occur over the course of a term in prison. This should include coping behaviors as well as other things. A great deal of previous research has been concerned with such changes, within the context of the general questions of the effects of imprisonment. Surprisingly, there is very little agreement as to what these changes are. Again, it is useful to review the literature in order to see how the choices in the present study were made.

There have been numerous attempts to use traditional objective psychological measures to assess the effects of imprisonment. For example, the MMPI has been used extensively to determine how imprisonment may affect personality functioning. No clear conclusions can be derived from this literature (Gearing, 1979). Self-esteem has also been a popular personality dimension to examine. Although comparison of findings is made difficult by differences in measures, subject sampling, and the time periods examined, it is clear that no consistent pattern has emerged (Bukstel & Kilman, 1980). Self-esteem has been found to increase after some period of imprisonment (Bennett, 1974; Gendreau, Gibson, Surridge & Hug, (1973), decrease (Fichtler, Zimmerman, & Moore, 1973), or remain unchanged (Atchley & McCabe, 1968; Culbertson, 1975).

Similar contradictory findings have been obtained with measures of other dimensions of psychological functioning. Sandu (1964) found an increase in hostility among prison inmates after three months of confinement. On the other hand, Peizer (1956) found that inmates became less "extra-aggressive" and more "intra-aggressive" as time served increased.

A more recent study supports the finding of increased inner-directed hostility with length of time served (Crawford, 1977). Using a crosssectional design, Heskin, Smith, Bannister, and Bolton, (1973) initially confirmed the findings of increased inner-directed hostility with amount of time served. However, in a subsequent test with a subset of their sample, reductions in both inner-directed and total hostility were found (Bolton, Smith, Heskin & Bannister 1976).

Studies that have examined locus of control have found either increased externality (Leblanc & Tolor, (1972); Levenson, 1975), or a curvilinear relationship with length of time served (Kiehlbauch, 1968). Attitudes towards the law and legal institutions have been found to become more negative with time in prison (Mylonas & Reckless, 1963); Sandu, 1964), or remain unchanged (Brown, 1970; Heskin, Bolton, Smith & Banister, 1974). Similarly, authoritarianism has been found to be either negatively related to the amount of time in prison (Aumack, 1956) or unrelated (Rosenfield & Linn, 1976).

Several studies have attempted to assess the effects of imprisonment using comprehensive batteries of psychological measures with groups of prisoners who varied in the amount of time they had served. The most well known of these is the series of studies carried out in England by a team of psychologists from Durham University (Bannister Smith, Heskin, & Bolton, 1973; Bolton et al., 1976; Heskin et al., 1973; Heskin et al., 1974). The Durham group conducted a cross-sectional sampling of 175 prisoners who had been sentenced to long terms of imprisonment, with four groups which varied in the amount of time they had served from a mean of 2.47 years to a mean of 11.29 years. The prisoners were administered a variety of traditional psychological measures to assess perceptual-motor and cognitive functioning, personality attributes, and a number of attitudinal dimensions. It was concluded that there was no overall deterioration in cognitive functioning associated with duration of imprisonment (Bannister et al., 1973). Retesting after an average period of about 19 months with most of the original sample confirmed this finding and even indicated significantly improved verbal ability (Bolton et al., 1976). There were no consistent findings of changes in attitudes or personality functioning that could be attributed to the length of imprisonment.

Similar cross-sectional studies have been conducted by Rasch (1977) in the Federal Republic of Germany and by Sapsford (1978a, 1978b) in England. Although Rasch noted that a large proportion of the prisoners he assessed showed signs of depression and emotional withdrawal, very few differences were found that covaried with the length of imprisonment. Furthermore, bitterness and expressions of demoralization by the prison environment (e.g., reports of sleep disturbance and loss of appetite) were most evident in the group of prisoners who had served the least time. This same pattern of greater distress in prisoners who had served less time was observed by Sapsford on measures of anxiety, depression, and hopelessness.

Sapsford supplemented the information he obtained from questionnaires with some interview data and some information gathered from files. The correlations with time served were generally not significant, and the few significant correlations that were observed were only moderate in size. The largest correlations with time served were a measure of introversion ($r=.39$), a measure of positive attitudes towards staff ($r=.46$), and an interview measure of tendencies to avoid thinking about the future ($r=.41$).

In summary, it would appear from the research reviewed above that general psychological deterioration is not an inevitable consequence of imprisonment. It has been noted that the most striking fact which emerges is the discrepancy between personal and phenomenological analyses of the experience, on the one hand, and date-based research describing it, on the other (McKay et. al., 1977). Yet the divergence is not surprising when one considers the methodological and conceptual inadequacies of existing research in the area.

In several ways, the research has been seriously flawed. One aspect that can be criticized is the use of measures that may be insensitive, or even completely irrelevant to understanding the effects of imprisonment and the psychological adaptation it entails (Cohen & Taylor, 1972). The samples of prisoners that have been studied often have been nonrepresentative (e.g., they were selected after systematic attrition by parole release), and the effects of other potentially significant factors (e.g., age, prior prison experience) typically have not been adequately controlled or taken into account.

Reliance on single-occasion assessments and simple cross-sectional

designs is another important example of methodological weakness. Although the approach is quite efficient in contrast to longitudinal analysis, attempting to detect changes which occur over time by studying groups of individuals at different stages in their terms of imprisonment requires some questionable assumptions.

For example, it is often assumed that the amount of time served is the only, or at least the most important variable determining the effects of imprisonment. However, the impact of imprisonment may vary according to both the absolute amount of time that has been served and the time remaining to anticipated release (Farber, 1944; Landau, 1978; Wheeler, 1961). Therefore, subjects who are selected on the basis of different lengths of time already served must be sampled so that court-determined sentences are equivalent for different groups. A number of studies have done this, but most have not.

Moreover, the cross-sectional design also requires matching on other variables that may mediate the effects of imprisonment, e.g., institutional settings, age, prior prison experience, individual attributes and coping resources). Since inmates are treated differentially on the basis of some of these variables (e.g, age and prior prison experience are important considerations in release and institutional transfer decisions), proper matching is exceedingly difficult, if not impossible. Thus, the confounding of factors that may determine the effects of imprisonment is quite likely, and any differences that are observed cannot be clearly interpreted.

Single-occasion studies of the effects of imprisonment make a further important assumption. It is assumed that change occurs in a linear fashion and at the same rate across individuals. Since subjects are assessed at some arbitrary point in their sentence, and not from entry to prison, one can only assume that any differences found are the result of imprisonment. Many individuals may experience a severe distress syndrome early in their sentences (Bukstel & Kilman, 1980) and gradually learn to adjust. Others may show a reversed pattern, and still others may display cycles of distress and successful adaptation (Toch, 1975). It is therefore not surprising that cross-sectional studies have found few visible differences, since they combine individuals at a variety of different stages in their cycles of

adaptation.

Conceptually, it makes little sense to search for the psychological effects of imprisonment without acknowledging that these effects may vary considerably across individuals. The basic deterministic approach which has characterized psychological studies in the area has ignored the fact that imprisonment cannot be expected to affect all individuals uniformly. As was discussed earlier, contemporary approaches to the study of human functioning under stressful circumstances emphasize the importance of the coping process in determining patterns of adaptation. Individual differences in coping have been ignored by studies that have sought to measure the psychological effects of imprisonment. Consequently, such studies have failed to increase our understanding of how imprisonment affects individuals.

It is clear from the above discussion that an attempt to study changes in coping behavior in prison must use a longitudinal design. Fortunately, this fits well with the need to monitor behavior for some period after the original measurement of coping, in order to test how well that measurement can predict later adaptation.

Thus, the present study included several occasions for repeated tests of the same subjects. This allowed us to look at changes in coping behaviors over time, and also to get a better estimate of the effects of other variables acting over time, such as the length of the prison term.

Aims and Objectives

The basic approach of the present study was determined by the theoretical stance and design considerations stated above. A summary of the principal objectives will be useful here, since this investigation had several aims. It was of course a longitudinal study of coping in penitentiary inmates, but more specifically we aimed to:

- (1) Establish techniques and measures to determine, classify and evaluate the effectiveness of coping behaviors which prisoners employ;
- (2) Investigate differences in coping behavior and cognitive appraisals among inmates, especially:
 - (a) differences in behavior of prisoners serving sentences of different lengths;

(b) differences between behaviors in prison and those used previous to imprisonment; and

(c) changes that occur over time in prison;

(3) Measure other factors which relate to coping behavior, and especially to determine the predictive relationships between coping behavior and adaptive or maladaptive institutional behavior.

METHOD

The basic purpose of this study was to examine the coping behavior of inmates in Canadian prisons. Within this overall objective, we had several aims, described above. In order to accomplish our various goals we used a variety of data-gathering instruments.

Our first goal was that of describing and classifying the coping behaviors used by inmates. This demands an in-depth examination of the responses shown by individuals across situations; therefore, the principal tool of the study was an extensive interview. A set of standardized questionnaires was also used for additional measures, especially appraisals and attributions. Finally, interview data were supplemented by information taken from institutional and medical files. Most of our measures were for behavior in prison, but comparable measures for behavior outside of prison were taken as much as possible, to allow comparisons.

These sources of information allowed us to describe coping behavior and relate it to inmates' general behavior patterns, both in prison and on the outside. To provide more quantitative data, the quality of coping was measured on several scales we constructed. In addition, we aimed to show how the coping analysis could be used to predict adaptation. To do this, we chose a set of indices of adaptation, both behavioral and emotional. Performance on these measures could then be related to coping and other behaviors.

In order to make these relationships predictive, the study encompassed a period of close to one and one-half years for each subject. Within this time there were three occasions for interviews and administration of questionnaires. This allowed data from the initial occasions to be used to predict later adaptation, and it also showed changes over time in behavior. Thus, we used a variety of measures to carry out a longitudinal study of coping behavior, with most of the measures repeated in successive testings of the same individuals.

Recent legislation in Canada has significantly increased the number of inmates serving sentences of ten years or more before they are eligible for parole. For this reason, we were particularly interested in the

differences between those imprisoned for long and short sentences. Accordingly, our selection of subjects was arranged so as to facilitate this comparison.

The sections below discuss the various parts of the study more specifically. First, the interview and questionnaires are described. Then, the details of the selection of subjects and the administration of measures are given. The concluding sections are concerned with the recording of data, ratings of coping, and the specification of variables used in statistical analyses.

Measures and Materials

The Structured Interview

Our most important source of data was a highly-structured interview. The questions had been designed, tested and revised during the preliminary stage of the study; details are included in the Stage I Report for this project (1979). In the preliminary work, most of the questions actually used in the study had been checked to establish that they reliably elicited the desired sorts of data. A summary of the reliability study is included in Appendix A.

Basically, there were three areas of information gathered in the initial interview. The first section included background and historical measures; in the second part, we surveyed the subject's behavior outside of prison; and a similar survey of behavior in prison was obtained in the final section. The second and third interviews included only the last set of questions, with a few minor changes. Copies of the complete question protocols for each interview are included in Appendix A.

The choice of questions included in the interviews was guided by the theoretical position described in the introduction. The great majority of the questions were concerned with how the subjects appraised their own difficulties, and how they responded to or coped with those problems. A brief description of the different sections of the interview follows.

Background

The first section of the interview was relatively short, composed primarily of questions on background items e.g., age, education, family circumstances, medical and psychiatric history, and previous imprisonment. There were also questions about the current offense and the inmate's expectations regarding his sentence. For example, we asked for the length of the current sentence, and also for the subject's estimate of the time he would actually serve.

This section of the interview was intended to function as an easy-flowing introduction to establish rapport between subject and interviewer, as well as to provide basic information. Some of the questions, such as the one regarding suicide attempts, were intended to give an early indication to the subject that questions of a relatively probing and intimate nature would be an integral part of the interview.

Life outside prison

The second part of the interview was intended to provide a comprehensive view of the prisoner's life before he was charged with his current offense. Of particular interest were the problems he encountered and the responses which he made to those problems.

The strategy of inquiry used in identifying problems was characteristic of the interview as a whole. We began with an entirely open-ended question, allowing the subject to indicate the areas which he saw as significant. However, we had a fairly comprehensive list of possible problem areas, and we eventually asked about all areas, even if they were omitted from the subject's original responses. We hoped that this technique would help the subject to recall various aspects of his life and elicit most of the major problems which he experienced, without forcing his answers in any direction.

At the end of the series of questions on problems, the subject was asked to arrange the set of problems elicited in the order of perceived importance. The ordered list was then used to gather information about how he coped with problems. For this purpose, three problems were chosen from the list. We attempted to choose problems which would be likely to evoke different types of responses; within this limit they were the highest

ranked items. For each of the problems chosen, we asked an extensive series of questions to find out what behaviors occurred when the problem arose, with as much detail as possible.

Unlike the usual approach used in clinical interviews - focusing on maladaptive responses - we attempted to elicit a complete description of all types of behaviors: adaptive or maladaptive, immediate or delayed, spontaneous or planned. Within this line of enquiry, individual questions focused on behaviors in an a priori classification of coping responses. Four categories were used: direct action or spontaneous behavior; palliative behavior which serves to reduce any emotional distress; avoidance or escape behavior; and problem-oriented behavior, serving to remove or resolve the problem condition.

In addition to the questions on problems and coping, the interview covered several other aspects of behavior and lifestyle. We attempted to cover the use of time, relationships with other people, and specific behaviors which are part of one's general pattern of coping behavior, e.g., the use of daydreaming. There were also measures of the subject's general appraisals of his life.

The last set of questions in this section dealt with the possible relationship between the inmate's criminal offenses and the problems he experienced. We asked whether he himself recognised any such connections, and about any association between the crime and emotional problems. These questions were aimed at providing some evidence about the relationship between criminal behavior and inadequate coping resources, as seen by the subjects themselves.

Life inside prison

The third section of the interview was quite similar to the second, except that it asked about how the inmate dealt with conditions and problems inside the prison rather than on the outside. As much as it was possible, the questions paralleled those in the second part, so as to facilitate comparisons of behavior and coping inside of prison with that on the outside.

As before, there was a concentration on problems and coping. Since life in prison is somewhat more predictable and less varied than life on

the outside, it was possible for us to be more specific in the listing of likely difficulties. The set of areas covered included some used by Toch (1977) to classify sources of stress in prison, as well as several others. The analysis of coping responses was entirely analogous to that in the previous section for life outside of prison.

Additional questions in this section were mostly like those in the preceding section. However, there were also some questions about situations unique to prison, e.g., spending time in one's cell.

Follow-up Interviews. The format of the second interview was essentially a repetition of the original section on behavior inside prison, with minor alterations and adjustments made to allow for slightly varied circumstances. Many questions were reworded to specify behavior under current conditions rather than expectations for the future, since subjects had had sufficient time to settle into their patterns of life in prison. For example, in the first interview we asked what job the inmate expected to have, whereas now we wanted to know the actual job he was currently performing.

There were also a few new questions, chosen to show changes in conditions or important events that had happened since the first interview. For example, we asked about any major or unusual events which had occurred in the interval between the two interviews. We expected this question to provide a measure of how the inmate coped with a crisis or emergency rather than an ongoing problem situation. We also asked specifically about changes in such things as the status of any appeal procedures.

The determination of a problem list and the analysis of coping were almost identical to the procedures used in the previous interview. However, we inquired about changes in the lists of problems from the first interview. Also, the list of possible emotional responses to problems was expanded to include boredom and loneliness in addition to the previous choices. This change and the few other minor changes were suggested by our experience during the first interview.

There were a few additional changes made in the third and last interview. We added questions to examine subjects' current expectations about their remaining time in prison before release, mostly repetitions of

items from the first interview concerning appeal procedures and the chances of obtaining early release. We also added a question on institutional transfers, as a supplement to the often incomplete file data.

A few questions were also changed slightly, most importantly the question concerning thoughts about the future, which was subdivided to ask separately about the future inside prison and that after release. Lastly, the questions about crises or unusual events were expanded in the third interview, and we asked about coping responses to the crises in a fashion parallel to the coping analyses for other situations. Other than these minor changes, the final interview was identical to the second.

Questionnaire Measures

In addition to the information gathered in the interview, we also used a set of questionnaires to provide other measures. They were selected to give information on emotional states such as anxiety or depression, to measure inmates' general appraisals and cognitions about their lives, to measure attitudes, or to provide data on specific behaviors such as drug use outside of prison.

A list of all the questionnaires which we used appears in Table 2.1, and copies of each are provided in Appendix B. The sections below describe each briefly.

Measures of Emotional State. Anxiety and depression are two of the most well-researched constructs in psychology. They are seen as central concepts in studying emotional reactions to stress, and as a result the literature on the psychological consequences of imprisonment makes recurring references to the pervasiveness of anxiety and depression among inmates. However, research focusing on changes over time is quite scant. The self-report measures of anxiety and depression which we used are described below. In addition, our rationale for the separate assessment of "hopelessness" is presented. Finally, a Mood Adjective Check List (MACL) is described.

The anxiety state (A-State) scale of the State-Trait Anxiety Inventory (STAI, Spielberger, Gorsuch, and Lushene, 1970) was chosen to assess levels of current anxiety. This scale is quite brief (20 items) and well accepted in the literature as a measure of anxiety state (Smith & Lay, 1974).

Table 2.1

Schedule for Administration of Measures

Data Source	Testing Occasion		
	1	2	3
Interview Part A (Background)	X		
Part B (Life Outside)	X		
Part C (Life Inside)	X	X	X
Questionnaire			
Spielberger State Anxiety Inventory	X	X	X
Beck Depression Inventory	X	X	X
Hopelessness Scale	X	X	X
Mood Adjective Checklist	X	X	X
Life Events Scale	X		X
Locus of Control Scale	X		X
Prison Control Scale		X	X
Self-Esteem and Self-Depreciation	X		X
Marlowe-Crowne Social Desirability Scale	X		X
Prisoner Attitudes Scale	X		X
Prison Problems Scale		X	X
Drug Use Inventory	X		
File Data			
Disciplinary			
Days earned remission lost			X
Days in punitive dissociation			X
Days lost privileges			X
Institutional job changes			X
Institutional transfers			X
Medical			
Initiations or requests for attention			X
Descriptions and classifications of complaints			X
Medications			X
Injuries			X

Beyond the excellent reliability and validity data which is reported in the manual (Spielberger et. al., 1970), extensive construct validity data has been reported, demonstrating that the A-State scale is a sensitive measure of response to stress (Kendall, Finch, Averbach, Hooke, & Mikulka, 1976; Kendall, 1978).

The Beck Depression Inventory (BDI) was selected to assess depth of depression because it is relatively short, widely used in the literature, and, most importantly, relatively well validated. It consists of 21 items covering affective, cognitive, motivational, and physiological areas of depressive symptomatology. Beck (1967) has reported reliability and validity studies with close to 1,000 clinically depressed individuals. In two studies, the correlation between BDI scores and clinically rated severity of depression was .65 and .67. More recently, Blumberry, Oliver, and McClure (1978) reported that BDI scores in a college population correlated .77 with clinical ratings of depression derived from psychiatric interviews. The BDI has also been shown to discriminate between depression and anxiety more effectively than various other measures of depression (Beck, 1967).

Hopelessness is a core characteristic of depression which we felt deserved particular attention. Depressive mood might be a common initial and transitory reaction to imprisonment. On the other hand, hopelessness ought to be a more enduring characteristic. Also, the seriousness of suicidal intent has been shown to be more highly correlated with negative expectancies and pessimism towards one's future than with depression (Minkoff, Bergman and Beck, 1973). The Beck Hopelessness Scale which we used is a brief 20-item true-false questionnaire which has been reported to have excellent internal consistency reliability, good correlation with clinical ratings of hopelessness, and consistent validity data to support it (Beck, Weissman, Lester, & Trexler, 1974).

To serve as an ancillary measure of mood state and change, it was decided that a brief adjective checklist could also provide useful information. Using the Multiple Affect Adjective Check List (Zuckerman & Lubin, 1965) and the Profile of Mood States (McNair, Lorr, & Droppleman, 1971) as sources, 42 items were selected to represent 8 dimensions of mood state that are both clinically meaningful and established in the literature

as separate mood factors (Jacobson, Weiss, Steinbook, Brauzer, & Goldstein 1978; Lebo & Nesselroade, 1978). The 8 mood scales in our Mood Adjective Checklist are: 1) depression; 2) anxiety; 3) fatigue; 4) confusion; 5) anger; 6) guilt; 7) friendliness; and 8) well-being. The first 5 scales are represented by 6 items each, and the last 3 scales by 4 items. Subjects were asked to check items to describe their feelings under several different sets: a) how they generally felt during the preceding week; b) how they usually felt while outside prison; and c) how they expected to feel in a year's time.

Surveys of Stressful Life Events. Accumulated research findings in recent years have left little doubt that there is a significant relationship between the occurrence of major events in one's life and emotional and physical disturbances (Dahrenwend & Dahrenwend, 1974; Gunderson & Rahe, 1974; Moos, 1976). However, the possible relationship between stressful life events and criminal behavior has not been documented. In explaining the responses to imprisonment, we felt it was important to take into account not only differences in coping but also the events which had occurred in an individual's life. For this purpose we adapted the Life Experiences Survey (LES, Sarason, Johnson, & Siegal, 1978) which was recently developed to be more specific and encompassing than the widely used Social Readjustment Rating Scale (Holmes & Rahe, 1967). Items list life changes frequently experienced by individuals in the general population. Respondents were asked to indicate which events they had experienced during the six months prior to their current offence(s), as well as rating the degree of stress experienced with each event.

Modifications of the LES for our purposes included rewording of a number of items to clarify meaning (e.g., "foreclosure of mortgage or loan" changed to "mortgage or loan you couldn't pay"). One item was eliminated because of its expected low frequency of occurrence ("retirement from work") and another ("change of residence") because of redundancy (i.e., with the item "major change in living conditions"). Finally, a number of items were added because they were particularly relevant to an inmate population e.g., "being sought by the police". These extra items appear at the end of the form.

A new form of LES was devised to be used at the end of the research

period, at the last Interview. This questionnaire, called the Prison Life Events Scale, listed a set of events which might happen during a term in prison. For example, we asked subjects whether they had applied for and received such privileges as unescorted temporary absences or parole. Instructions were the same as for the previous scale.

Locus of Control. The extensive research surrounding Rotter's (1966) construct of internal-external (I-E) locus of control indicates pervasive differences in people's tendencies to make attributions about the causation of events. Generalized expectancies for internal versus external control have been shown to be both predictive of behavior in numerous experimental situations and correlated with a variety of important real-life variables. Several studies have specifically focused on the relationship between locus of control and coping (e.g., Anderson, 1977). Moreover, perceived loss of control can be expected to be a basic response to imprisonment (McKay, Jayewardene & Reddie, 1977).

We used two scales to measure differences in perceived control among inmates which might be related to coping. The first was a factor-analytically refined version of Rotter's (1966) original I-E scale (Collins, 1974). In addition to providing an overall I-E score, four factorially derived subscales or components of I-E can also be scored, viz., belief in a difficult world, an unjust world, an unpredictable world, and a politically unresponsive world.

We constructed the second scale to be specifically relevant to the experience of imprisonment. The Prison Control Scale is made up of 40 items designed to cover the various domains of prison life, (e.g., getting a work change that you want; whether other inmates like and respect you). Respondents were asked to indicate how much control they thought they had over each sort of event. The scale was scored for total perceived control. A preliminary testing had been conducted by Porporino (1983) and the scale was shown to have a high internal consistency reliability of .a1. It was also found to significantly differentiated between inmates nominated by case management staff as either good or poor copers. Thus, we expected that the scale would be useful when used predictively.

Other Measures. In addition to the measures described above, we administered several other scales.

The first scale in this category was a measure of self-esteem, a variable usually considered quite important as a determinant of general emotional state and as one of the principal cognitive mediators of behavior. Although the impact of imprisonment on self-esteem has received considerable theoretical and empirical attention (Bennett, 1974; Gendreau, Grant & Leipziger, 1979; Hepburn & Stratton, 1977; Reckless & Dinitz, 1970), we expected that many of the inconsistencies were a function of an interaction with coping behavior. If an inmate cannot cope with some of the conditions of imprisonment his self-esteem should decrease, whereas successful coping should lead to unchanged or even increased self-esteem. No previous study has examined this relationship. To measure self-esteem we used a brief 20-item scale made up of 10 items from the widely used Coopersmith (1967) Self-Esteem Inventory and 10 items from the self-depreciation scale of the Basic Personality Inventory (Jackson, 1974).

Another measure was intended to assess some possible biases in the measurement process. A major problem with all self-report scales is the fact that respondents may be defensive and attempt to present themselves in an unrealistically favorable light. This is commonly referred to in psychometrics as a social desirability response bias. When using self-report scales, some attempt should be made to detect a "faking-good" response bias, which could seriously influence the validity of scores; this would seem to be particularly important with a population of inmates. The Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) has been extensively used in the literature for this purpose. The scale which we used in our research was a shortened 20-item version which correlates with the full-length scale better than .90 (Strahan & Gerbasi, 1972).

Criminal attitudes and belief systems have been consistently implicated in criminological theory and research on the antecedents of criminal behaviour. Styles of adaptation in prison have also been related to criminal attitudes (Irwin, 1970; Thomas, 1977). Several measures were used in the present study to assess differences in criminal attitudes. The scales were based on the initial work of Mylonas and Reckless (1963) and were adapted for use in the Planning and Research Branch of Ontario's Ministry of Correctional Services (Gendreau & Gibson, 1970). Over the last decade, they have been administered to large numbers of Canadian federal

and provincial offenders. Extensive convergent and predictive validity information is available (Andrews & Wormith, 1983). Moreover, the scales have been shown to be quite useful in measuring the effects of various correctional treatment programs (Wormith, 1980). The measures include subscales tapping general Attitudes Towards the Criminal Justice System (25 items), Identification with Criminal Others (6 items), Tolerance for Law Violation (10 items), and Awareness of Limited Opportunities regarding the future (8 items).

As a measure of primary appraisals of problems in prison, we also included a 40-item inventory of common concerns expressed by prison inmates (Prison Problems Scale). The items were derived from a variety of sources, including those mentioned in Toch (1975), Cohen and Taylor (1972), and especially, Toch, (1977). At least two items were chosen to represent each of the dimensions listed in the latter. In addition, a number of concerns which had emerged during clinical interviews or during preliminary work were included. As with the Prison Control Scale, previous testing (Porporino, 1983) had indicated that the Prison Problems Scale had high internal consistency (.93) and could differentiate between inmates nominated by staff as good or poor copers.

The final scale which was included was an inventory of drug use, primarily for life on the outside previous to imprisonment. An impression common to professional staff dealing with inmates is that a significant proportion of crimes are committed under the influence of alcohol or drugs. Since the use of drugs is very common as a coping behaviour, it was important for us to gather information on its occurrence and its relationship to other aspects of coping. The scale which we used was derived from Lightfoot-Barbaree and Barbaree (1979), but with extensive revisions. In addition to measuring the use of various drugs, this questionnaire asks about possible connections between an inmate's drug use and his criminal offences.

File Measures

The last category of data was gathered from information available in inmates' institutional and medical files. These items were mostly indices of the individual's adaptation to the prison environment, but they also included background items. In some cases file data were redundant with self-report measures, but they were recorded in order to provide corroboration.

Measures of adaptation taken from files were relatively simple data which we had found to be readily available. They are listed in Table 2.1. It should be noted that we had intended to use additional types of file data, e.g., prison work records, but these were soon found to be very much incomplete, and clearly unusable as outcome measures. Only disciplinary offenses were reliably contained in the institutional files, and records of medical treatment seemed generally comprehensive even if sometimes difficult to read.

Background information taken from files included measures of socioeconomic and family history, previous criminal record and imprisonment, etc. A more extensive description is given in the section listing all measures used in the study (in the Appendix). While many items were often missing or incomplete, they were recorded whenever possible. As described below, file data were taken only after the time scheduled for each subject's final interview.

Selection and Testing of Subjects

Potential subjects were chosen from lists of newly arrived inmates maintained by the Regional Headquarters (Ontario) of the Correctional Service of Canada. We aimed to have the initial interview take place as close to the beginning of the sentence as possible, and therefore eliminated those who had been sentenced more than one month prior to their transfer to penitentiary. With this exception, we included all inmates who had been newly sentenced to terms of at least two years, the usual minimum sentence for a Federal penitentiary. This criterion excluded prisoners returning to serve the end of a sentence after parole revocation with no new convictions.

The selection of potential subjects from the list was random with the following constraints. In order to assess the effect of length of sentence, the sample was divided into short-term (less than 5 years), medium-term (5 to 10 years) and long-term (10 years to life) offenders. We wanted to get a roughly equal number of subjects in each of these subgroups. However, because the three types of inmates were not equally represented in the prison population, we had to select inmates separately for each subgroup. Thus, the sampling was random but separate for each group. Since there were far fewer long-term inmates than those in the other two categories, we selected nearly all long-termers who arrived during the sampling period.

The selection of subjects began in October, 1980, and continued until April, 1982. Samples of potential inmates were obtained usually every three weeks. At each sampling session we selected as many subjects as we could schedule for initial interviews during the ensuing period.

At the beginning of the study a Regional Reception Centre (RRC) system was in operation: all inmates were initially transferred to the RRC, after which they were moved to the institution where they would serve at least the first part of their term. Inmates were at this time spending an average of 22 days in the RRC. We attempted to see them two to three weeks after their transfer from the RRC, or about five to six weeks after their arrival into the penitentiary system.

When we were approximately halfway through recruitment of subjects the RRC system was eliminated, and thereafter inmates were sent directly to their assigned institutions. To maintain comparability with the first half of our sample the delay before the interview was held constant, so that we saw inmates approximately five weeks after they had arrived in their respective institutions.

All Federal institutions for males in the Ontario region were included in the study. However, in practice no inmates were initially assigned to minimum security institutions, so the original interviews were conducted in one of two maximum-security institutions (Millhaven or Kingston) or one of three medium-security penitentiaries (Collins Bay, Joyceville, or Warkworth).

When the name of a potential subject had been selected, it was submitted to a contact person in the respective institution for screening

as to suitability for the study. Contact persons were usually institutional psychologists. They were asked to eliminate from the lists those individuals who would be unable to participate in an interview or testing situation owing to illiteracy, inability to communicate in English, mental retardation or active psychosis. Security personnel in each institution were asked to identify those who might represent a threat to the safety of an interviewer. Of the 184 potential subjects submitted, a total of 17 were screened out in this process (See Table 2.2). Five individuals were eliminated because of language problems, 1 was illiterate, 5 were judged psychotic or currently too agitated, 2 were mentally defective (including 1 with a recent head injury) and 4 were seen as security risks.

The remaining potential subjects were scheduled for brief consent interviews, conducted by the principal investigator. When the inmate appeared, the researcher presented him with a written summary of the aims and procedures of the study and answered any questions. Potential subjects were reassured that their responses would be treated with full confidentiality and that they had the option of withdrawing from the study at any time. The inmate was then asked whether he was willing to participate. If he agreed, he was asked to sign a consent form, showing his willingness to complete the interview and testing sessions as well as allowing the researchers to examine his institutional and medical files. (Copies of the information and consent forms are included in the Appendix C.) As may be seen in Table 2.2, a total of 15 inmates declined to participate at the consent interview, and another 4 declined prior to the completion of the first interview and testing session.

For a variety of reasons, a third group of potential subjects was unavailable for either the consent interview or for the actual interview and testing. The reasons for their unavailability were unique and not related to the study (e.g., temporarily transferred for trial, accidental injury, escaped from custody, etc.). Most of these inmates would have become available at a later date, but we chose to drop them from the list if they could not be interviewed during the time constraints used for the study as a whole. A total of 15 inmates were lost in this category.

After a subject gave his consent, his file was briefly reviewed to

Table 2.2

Disposition of Potential Subjects

	Length of Sentence			Total
	Short	Medium	Long	
Original Sample	58	66	60	184
Losses:				
Screened out (see text)	5	8	4	17
Refused to Participate	5	4	10	19
Unavailable	(3)	(7)	(5)	(15)
Included in Study	45	47	41	133

provide information on possible areas of difficulty and some minimal background information. The first interview was then scheduled for the earliest convenient time, usually within ten days after consent was received. Most of the interviews were conducted by a female interviewer who had extensive interviewing experience, including prior work with penitentiary inmates. The remaining interviews were conducted by the principal investigator.

The interviews took place in private offices or interviewing rooms within each institution. They were fairly lengthy, usually lasting two to two and one-half hours; usually, they were completed in a single session, but occasionally a second session was necessary. Although the highly structured interview protocol was used for all sessions, the interviewer generally tried to establish a relaxed conversational flow, allowing inmates to digress or to cover topics in a different order from that of the interview form. This approach was found to be helpful in achieving the high degree of candidness and easy rapport which we desired. The rather personal nature of many of the questions, and perhaps the length of the interview, often made the interviews intense and intimate encounters. This was even more so in the case of the follow-up interviews, which began with an already established relationship between interviewer and subject. Overall, we felt that we had achieved very good working relationships with most of our subjects.

After the interview, the inmate was seen again to administer the written questionnaires. When feasible, this testing was done with small groups of 2-5 inmates, but all inmates were consulted prior to group testing and offered the option of individual testing. A small minority opted for this alternative. Also, group testing was not possible in the maximum-security institutions. The set of questionnaires took approximately one hour to complete. During this time the interviewer remained in the room and answered any queries, but the tests were largely self administered.

There were 133 subjects who completed both the first interview and the questionnaire. As may be seen in Table 2.2, there were 45 in the short term group, 47 in the medium-term group and 41 in the long-term group.

If one eliminates those inmates who were not available for the study,

the potential subject pool consisted of 169 individuals. Of these, the 133 who participated constituted 78.7%. Those who refused were 11.2%, and the remaining 10.1% were screened out as described above.

Follow-up Interviews and Tests

The second set of interviews and questionnaires were administered approximately three and one-half months after the initial interview. The procedures followed were the same as before, with the main difference being that both interview and questionnaire were somewhat shorter, usually enabling the administration of both in a single session. Accordingly, group testing was rarely used for the second questionnaire.

Before the expected time of each follow-up interview, regional records were consulted for the subject's current institutional placement, and the respective contact person was asked to arrange for clearance. This was intended as a check for problems which might have arisen since the first interview. Fortunately, none of our subjects had to be eliminated from the study as a result of these follow-up screening procedures. However, occasionally an interview or test was delayed by a few weeks e.g., pending the subject's release from punitive dissociation.

As time went on, scheduling became generally more complex as first and second interviews were being conducted simultaneously. Also, some subjects had moved to lower-security institutions, and interviews in an increased number of places had to be coordinated. Thus, the variation in time interval between interviews 1 and 2 ranged from 13 weeks to 22 weeks, with a mean interval of 16 weeks.

Participation in the study remained excellent over this interval, with a loss of only three inmates out of the original 133. One of these declined further participation, the second was released early on day-parole, while the third was transferred to a different region. It was decided that the data for these three individuals would be dropped for most statistical analyses. However, their data are included in the descriptive summaries of the results from Interview 1. In all, 130 inmates completed the second interview and test.

The third and last set of interviews and tests were administered approximately one year after the second set.

We were aware that a number of our subjects, especially those in the short-term group, were eligible for release on day-parole or full parole prior to this time. Therefore, we attempted to interview those individuals who had been approved for early release prior to the one-year date. We supplied lists of subjects to the National Parole Board Office in Kingston, and asked to be notified when any of them were approved for parole. We also sent a letter to each of our subjects, asking them to let us know if they were about to be released or transferred to a different region. A form letter and self-addressed envelope were included in this package. However, these procedures were not very effective. All in all, we were able to interview only nine inmates early (between 8 and 11 months after the second interview). In most cases we were too late - by the time we found out about the granting of the parole, the inmate had actually left the institution.

As shown in Table 2.3, 24 of our subjects were unavailable for Interview 3 because of early release on parole. We also lost subjects before the final interview for a number of other reasons shown in the table. Of the original 133 subjects at Interview 1, only 96 completed the third interview. The range for the time interval between the second and third interviews was 34 to 58 weeks with a mean of 52 weeks.

In terms of procedure, the final interview and testing session was identical to the first two. Again, this session was more lengthy and often took two half-day periods. The final test was always administered on an individual basis, since, by this time we rarely had several subjects in a particular institution at the same testing period.

Table 2.3 also shows the breakdown of subject losses by sentence length after Interview 1. As may be seen, the losses affected primarily the short-term subgroup in our sample. Out of the original 45 such subjects, only 18 (40%) completed the third interview. It should be kept in mind, however, that the majority of these inmates left on some form of parole shortly - within six months - after the second interview, and thus their second interviews and tests may be considered as measuring behavior close to the end of their terms.

Table 2.3

Subject Losses at Follow-up Interviews

Reasons for Losses:	Interview 2	Interview 3
Refused/Unable	1	3
Absent-At Court/UAL		4
Left Region	1	2
Day Parole	1	19
Full Parole		3
Mandatory Parole		2
Warrant Expiry		1
Total Remaining:	130	96

Length of Sentence:	Short	Medium	Long	Total
Total Sample at I1	45	47	41	133
Losses at I2	3			3
Losses at I3	24	8	2	34
Total Sample at I3	18	39	39	96

Collection of File Data

When all three interviews and testings had been completed for a given subject, we collected file data. Both the institutional and medical files were searched at this time, using the date of the last interview as the cut-off point for data to be included. We gathered file data regardless of whether the inmate had been available for the third interview: if he had not been available, files were searched for entries up to one year after the second interview. We were successful in obtaining most of the files for this purpose. A small number of files were unavailable, mostly because of transfers to other regions. Out of 130 subjects who had completed the second interview, institutional files could not be obtained for only two, and medical files were not available for five.

In the case of inmates who left the penitentiary system prior to the date of the third interview, file data included entries made until the time of release. An exception to this was for inmates who were released but returned when their paroles were revoked within the one-year period. In these cases, file data included the time until the date when the third interview would have taken place. As explained later in the description of measures, file measures were corrected for any extended absences from the penitentiaries.

The procedures for recording information contained in the files included the use of data-collection forms, with precoded categories. However, we also recorded considerable detail, allowing us to later recode the data or to check items for consistency. We were well aware of the inconsistency and unreliability of file information, and tried to ensure that data were recorded as accurately as possible.

As mentioned later, we sometimes found discrepancies between inmate self-reports and file information on background items. Our general approach in these cases was to accept the self-report data as the more reliable, since much of the information found in the file was based on self-reports, likely given in less candid circumstances.

Measures and ratings

Answers to interview questions were recorded on the interview form directly. They were later entered into a PDP-11/23 computer and stored on disk by means of an entry program written expressly for this purpose. The program prompts the operator with the text of questions from the interview, one at a time; when the answer is entered, it checks that it is within the limits of valid answers for that question. It was hoped that use of this program would minimize problems inherent in dealing with so many different variables. (This program is available for other uses, with the consent of the Ministry of the Solicitor General and the principal investigator. It is written in Pascal, and ought to be useable on other machines with speed equivalent to that of the PDP-11.)

The questions had been constructed so that most yielded numerical answers, which were entered into the computer without change. In some cases, answers had to be categorized by an assistant when they were entered; questionable cases were referred to the principal investigator for categorization. Scoring of questionnaires was done by hand, and the results were included in the information entered onto the computer.

Separate computer disk files were created for each subject for each interview. Data taken from institutional files were scored first by the principle research assistant, and then entered into a separate computer file. Data files from individual subjects were transferred to the Queen's University mainframe computing facility, two IBM 4341 machines. All data were combined and entered into a system file for use with the Statistical Package for the Social Sciences (SPSS) release 9.0 (Hull and Nie, 1981).

Coping ratings

The information obtained about coping responses was as complete as possible, but not initially categorized. Therefore, it was necessary to categorize and evaluate it. This was done using a series of scales and rating instruments designed for the purpose. Since the resultant scores are central in the results of the study, the rating procedures will be described here.

Probably the most important ratings are those of the efficacy of coping responses. If one responds to a stressful situation in order to

alleviate the stress, then the quality of the responses should be determined according to how well they lead to an improvement in the problem situation. Accordingly, we constructed two scales to measure aspects of efficacy. The first (Benefits) scale provides five categories for rating the beneficial effects which will likely result from a set of responses. The second scale (Costs or Risks) rates negative effects or exacerbation of the situation which is likely to result, using one of four categories. Detailed descriptions of the rating scales are included in Appendix D.

Scores on each of these scales were assigned for each problem situation for which coping responses were recorded. For most purposes, the mean across problems analysed at each interview was used. We also found it useful to combine these two scales to measure both benefits and costs of responding together. Thus, we multiplied the two scores to form an overall rating (Efficacy) and the mean product was used in many analyses. The overall Efficacy scale has a range from 1 to 20, although in practice scores ranged from about 4 to 18.

The above scales were used to rate responses of an individual to particular situations. For both, the entire set of behaviors which a subject gave as responses to a single problem was rated as a single unit. In order to provide information on how well subjects varied their coping responses appropriately according to the demands of different problem situations, another five-category scale (Variety) was included. This scale gives a single measure for all of the responses in an individual's situations taken together. Again, a copy of the rating categories is included in the Appendix.

The final type of coping measure classified responses into categories or modes. Using our preliminary data, we derived a set of 11 different functional response classes. The entire set of responses for each subject for each interview was rated as to whether there was evidence of responding in each mode. From these data, the total number of categories used (Total Modes) was calculated, as well as a Modes Index which weighted categories according to assumptions about their relative usefulness in dealing with problems. Descriptions of the list of categories, as well as the derivation of the Modes Index, are included in Appendix D.

Variable List

Given the comprehensiveness of the interview and testing procedure, a great many variables were created. A few of these proved difficult to use, either because they were answered by too few subjects or because they were impossible in practice to interpret clearly. However, the remaining number of variables comprised close to 1000 separate items, and it was therefore necessary to combine and arrange them in order to create a manageable number of variables for statistical analyses.

The resultant list of variables used in most analyses is shown as Table 2.4. As can be seen, items are arranged into a series of four types, principally for theoretical reasons: background, coping process, appraisals, and outcomes. The background set includes information on socioeconomic and personal history factors; coping process designates measures of coping behaviors, both current and historical, and includes specific behaviors which are useful in dealing with problems; the appraisals section includes items measuring both general and specific cognitive evaluations and expectations; finally, outcomes are measures of adaptation and stress in prison.

Most items are interpretable from their titles, but a few require explanation. Descriptions of variables and their derivation (where relevant) are included in Appendix E.

Table 2.4
Principal Variables

This table includes all of the basic variables for analyses. In some cases new variables were created by combining those listed here. At the left are abbreviated descriptions of the variables; to the right of these are the "names" in the SPSS system file. It should be noted that variable names beginning with a "J" are from file information, while all others are from self-reports or questionnaires.

I. Background Variables

Sociological

Father's occupation	A14C
Social class (family of origin)	J10
Family type (ages 6 to 11)	J6
Number of siblings	K3
First or only born (Y/N)	D7
Age at first interview	A1
School years completed	A12
Marital status	B1C
Job training (level)	K6

Prison and Criminality

Age of 1st recorded behavior problems	J12
Juvenile record (Y/N)	J14
Age at 1st FPS entry	J15
Number of convictions	J16
Total previous prison	D5
Proportion of previous life in prison	D6
Siblings ever in prison (Y/N)	A15D
Number of criminal friends	B4B
Percent of criminal acquaintances	B4C
Visible tattoos (Y/N)	J11
Reception center or direct placement	J19
Offense type	J3
Sentence at I1	J1

Principal Variables (continued)

	Out	I1	I2	I3
II. Coping Variables				
General Ratings				
Total Coping Modes	J34L	J35L	J36L	J37L
Coping Mode Index	K100	K101	K102	K103
Coping Variety	B31	C28	E31	G35
Coping Efficacy	COPAV	COPAV1	COPAV2	COPAV3
Coping - historical				
Previous psychological problems (Y/N)		A8		
Suicide index		K34		
Number of drugs index		K32		
Drug frequency index		K35		
Alcohol abuse index		D61		
Problems in prior prison term (Y/N)		J18		
Time in current residence (before arrest)		B1B		
Longest relationship with female ever		B1D		
Time on current job (before arrest)		B7B		
Longest time ever held job		K30		
Coping - specific behaviors				
Attempts to control thoughts		C22H	E22I	G27I
Frequency of Daydreams	B46	C41	E49	G50
Where get help for problems	B27	C24	E27	G31
General plan for doing time		C9	E10	G14
Plan or live day by day	B47A	C9B	E10B	G14B
Goal to accomplish (Y/N)		C9D	E10DX	G14DX
Future plans	B48A	C45	E53	
Future plans - prison only				G54
Future plans - after release				G54A
Frequency of thoughts of:				
current situation	B47			
future in general	B48	C45A	E53A	
future in prison				G54B
future after release				G54C
past	B48C	C45B	E53B	G54D
Pattern of socialization		C6C	E7C	G11C
Number of Friends	K9	K10	K11	K12
Number of letters		C7B	E8A	G12A
Number of visits		C8A	E9A	G13A
Irwin's categories		C9E		G15
Frequency receive news (read and listen)		K24	K25	K26
Time spent sleeping		C1	E2	G6
Proportion of time visits/letters		D38	F7	H7
" " " socializing		D39	F8	H8
" " " group meetings		D40	F9	H9
" " " passive activity		D41	F10	H10
Percent optional cell time		C5	E6	G10

Principal Variables (continued)

	Out	I1	I2	I3

III. Appraisal Variables				

Primary appraisal				

Frequency of missing people outside		C20A	E21B	G26C
Total problems mentioned	D14	D48	F44	H44
Specific problem: miss family/friends		K41	K61	K81
" " miss freedom		K42	K62	K82
" " lack programs		K43	K63	K83
" " regret past		K44	K64	K84
" " boredom		K45	K65	K85
" " inmate conflicts		K46	K66	K86
" " future concerns		K47	K67	K87
" " cell conditions		K48	K68	K88
" " lack staff support		K49	K69	K89
" " medical services		K50	K70	K90
" " miss specific things		K51	K71	K91
" " worried about safety		K52	K72	K92
" " other		K53	K73	K93
Prison problems scale			E60	G64
Activity deprivation index		K33		
Life events scale (previous)	C47A			
Prison life events scale				G65
Secondary appraisal - general				

Social desirability		C49		G58
Self-depreciation		C49A		G58A
Self-esteem		C49B		G58B
Hopelessness		C49C	E61	G58C
Checklist for 1 year in future: anxiety		C57A		G60A
" " " " " " guilt		C57B		G60B
" " " " " " friendliness		C57C		G60C
" " " " " " wellbeing		C57D		G60D
" " " " " " depression		C57E		G60D
" " " " " " fatigue		C57F		G60F
" " " " " " confusion		C57G		G60G
" " " " " " anger		C57H		G60H
Prison locus of control scale		E58		G61
Attitudes toward criminal justice		K121		K122
Locus of control scale: total internal		C54E		G63E
" " " " " " external		C54F		G63F
" " " " " " powerful others		C54G		G63G
" " " " " " chance		C54H		G63H

Principal Variables (concluded)

	Out	I1	I2	I3

Secondary appraisals - specific				

Estimated chance of appeal success		K21		G1B
Frequency think of appeal		K22		G1C
Is time remaining long (Y/N)		A4A		G3A
Time left easier than time served (Y/N)				G3B
Estimated chance release at PED		A5A		G4
Estimated chance no release until MSD		A5B		G4A
Sentence discrepancy expected:actual		D1		
Letters discrepancy desired:actual		D46		
Visits discrepancy desired:actual		D47		
Rating of job	B7C		E4B	G8B
Number of positive things in prison		C43	E51	G52
How often staff are helpful		C19B	E20B	G25B
Rating of life overall		C44	E52	G53
Chance of MS revocation after release				G55
Chance of new sentence after release				G55A
IV. Outcome Variables				

Behavioral				

Institutional moves index			J19B	
Discipline index			K129	
Level of custody		AA3A	AA4A	AA5A
Institution		AA3B	AA4B	AA5B
Medical				

Number of general somatic complaints			J29W	
Number of stress-related complaints			J30W	
Number of days on stress-related meds			J30BW	
Number of days on psychotropic meds			J30CW	
Number of initiations			J31W	
Total injuries			J32	
Emotional				

Sleep problems (Y/N)	B5A	C2	E3	G7
Frequency of anger	B50A	C40W	E48W	G49W
" " guilt	B50C	C40CW	E48CW	G49CW
" " loneliness			E48D	G49D
" " boredom		C15A	E16AX	G21
Beck depression scale		C48	E55	G57
Checklist for past week: anxiety		C51A	E56A	G59A
" " " " guilt		C51B	E56B	G59B
" " " " friendliness		C51C	E56C	G59C
" " " " wellbeing		C51D	E56D	G59D
" " " " depression		C51E	E56E	G59E
" " " " fatigue		C51F	E56F	G59F
" " " " confusion		C51G	E56G	G59G
" " " " anger		C51H	E56H	G59H
Spielberger anxiety scale		C53	E59	G62

RESULTS

Preliminary Analyses

Before considering what is shown by the results of this study, it is important to consider some characteristics of the measures used. This section will deal with the reliability of the Coping Efficacy measure, in order to establish its statistical usability. Following this we will consider the intercorrelations of the several coping scales. Next, data on the test-retest correlations of selected variables will be presented, to demonstrate the degree of stability over time in the individual values. Finally, the possible distortions of self-report measures by the effects of social desirability will be established.

Reliability of Coping Measures

As described above, the measures of Coping Efficacy were based on the responses given by each subject in response to questioning about problems they experienced. The entire set of responses for each problem was copied from the interview form onto a large index card for rating. The card was identified only with the coded subject number, the interview number, and the subject's description of the problem. Since no other information about the subject's identity or personal characteristics was deliberately included, the ratings were as close to "blind" as possible. (Of course, the responses or problems themselves could sometimes provide additional information which might be used for identification; these clues were ignored as much as possible in the rating process.)

Sets of responses were rated according to the likely benefits they would bring (benefits scale) and also the negative consequences which would be likely to ensue (costs or risks scale). We conceived of many situations where there are tradeoffs between the benefits and risks of particular responses, and in general we conceptualized an interaction between benefits and risks. Therefore, overall Coping Efficacy scores were obtained by multiplying ratings of benefits and risk for each situation, and averaging these across situations for each interview for each inmate.

Reliabilities with these same rating scales for very similar material had previously been calculated (Porporino, 1983). The primary difference was that in the previous case the coping problems consisted of a set of 13 common situations chosen in advance by the researcher, rather than the individual sets of problems used in this study. The two raters were both trained clinical psychologists who were quite familiar with prison settings and inmate behavior. Six of the 13 situations were randomly chosen for the reliability test and rated independently by the two raters. The correlations of the two ratings ranged from .77 to .97 across the six situations. When the Efficacy scores were averaged across the six situations, an interrater reliability of .95 was obtained. This value is quite satisfactory by any criterion. In addition, inspection of the means and variances for each situation showed very close agreement by the two raters.

In this study, two raters each scored benefits and risk for the coping responses obtained for problems within prison at the first interview. Both raters were experienced clinical psychologists with extensive experience in penitentiary settings. Interrater reliabilities were calculated for Efficacy scores across subjects, both for single problems and the mean score across problems. The two sets of ratings correlated .89 for the first problem listed by subjects, .96 for the second problem, and .86 for the third. The mean Efficacy scores across problems for the two raters correlated .85. Furthermore, the mean and variance of the Efficacy scores for the two raters were very similar ($\bar{X} = 10.8$ and 11.2 , and $SD = 3.3$ and 3.8 respectively for the two raters). These findings suggest that the Efficacy of coping responses could be scored quite consistently by independent raters.

Intercorrelations of Coping Measures

Although we regarded the Efficacy measure as the most important index of the quality of coping behavior, several other ratings were made from the responses. These included the Variety score, which attempted to measure how a subject varied his behavior according to the demands of different problem situations. Responses were also classified into a series of coping modalities, to see how specific kinds of coping responses relate to other factors. From these, other measures were derived, including the total of

the Number of Modalities used, and a Coping Modes Index which is based on assumptions about the values of different coping modes. Details on these scales may be found in Appendix D.

It is important to establish the degree of independence of these measures. If they are very highly interrelated, it would be redundant to retain them all as separate variables for subsequent analyses. Therefore, we computed the intercorrelations for the several measures; since there were four independent assessments of coping, there are four sets of intercorrelations. These are shown in Table 3.1.

The first matrix is that for the assessments of coping on the outside, previous to imprisonment. As can be seen, the measures seem generally related, although the correlations vary from very high to insignificantly small. The Efficacy scores are highly related to the Benefits scale, and it would appear that these two variables are essentially redundant. We would also expect the two measures based on coping modality to be closely related, although the obtained correlation is only .63. At the same time, the correlations of both modality variables with all others in the set are quite low, so there may be seen as a related pair of measures which are relatively independent of the others. Finally, the Variety score correlates significantly with each of the other measures, but it still provides some independent information since the correlations are only intermediate in size.

A similar picture emerges when one examines the matrices for the three assessments of coping in prison, although the intercorrelations are generally higher. In each of the three sets, it is obvious that the Efficacy and Benefit scales are virtually identical, with correlations of at least .98. The two modality variables each show intermediate correlations with others in the set, and their correlations with each other are of the same order. Lastly, the Variety index seems partly redundant with the efficacy scores, but not entirely, and it also relates to the modality variables at an intermediate level.

On the basis of these data, we will generally treat the Benefits and Efficacy scales as identical. In subsequent analyses we will use only the Efficacy scale since it contains more information than the Benefits scale alone, and the latter will be ignored except for descriptive purposes. We

Table 3.1

Intercorrelations of Coping Measures

Occasion: Outside

	Benefits	Efficacy	Modes Index	Variety
Total Modes	.01	.11	.63***	.19*
Benefits	--	.88***	.18	.73***
Efficacy	--	--	.21*	.69***
Modes Index	--	--	--	.23**

Occasion: Interview 1

	Benefits	Efficacy	Modes Index	Variety
Total Modes	.02	.36**	.51***	.32***
Benefits	--	.99***	.55***	.87***
Efficacy	--	--	.53***	.86***
Modes Index	--	--	--	.49***

Occasion: Interview 2

	Benefits	Efficacy	Modes Index	Variety
Total Modes	.38***	.35***	.41***	.44***
Benefits	--	.98***	.53***	.80***
Efficacy	--	--	.53***	.81***
Modes Index	--	--	--	.42***

Occasion: Interview 3

	Benefits	Efficacy	Modes Index	Variety
Total Modes	.37***	.33***	.48***	.38***
Benefits	--	.98***	.59***	.83***
Efficacy	--	--	.56***	.82***
Modes Index	--	--	--	.54***

* $p < .05$ ** $p < .01$ *** $p < .001$

will use both the Coping Modes Index and the Total Modes, since neither is particularly well related to the other variables. Finally, we will retain the Variety index for some purposes, but it will generally be interpreted as an alternate measure of Efficacy.

Test-Retest Correlations

We also calculated the correlations for each measure across the four assessments, i.e., behavior outside of prison, and inside prison on three different occasions. It should be noted that the coping ratings were assessed independently for the four occasions, and the rater on each occasion was given no information about behavior or ratings at the other occasions. Thus, the correlations across assessments may be used to measure the stability of behaviors within individuals across time, as well as providing practical guidance as to how many measures need to be retained for optimal prediction.

The test-retest values for the four coping measures discussed above are included in Table 3.2. As can be seen, they vary in magnitude, although none are greater than intermediate in size. The most substantial are those for the Efficacy measure. Inspecting the correlations for coping within prison, there is a visible relationship between the size of the correlations and the time between any two tests. Thus, the correlation between the values for the first two interviews, with an elapsed time of only 4 months is .45; in contrast, the correlation between the first and last interviews, separated by about 16 months, falls to .23.

These values may reflect in part the unreliability of the scales used. However, it has been shown that the scoring is reasonably reliable, at least for Efficacy, so the obtained pattern also measures the stability of behavior across time. As will be seen later, the mean values for the coping measures do not change appreciably across the three interviews. Therefore, it appears that there was a considerable amount of rearrangement in the ordering of individuals across time.

Not surprisingly, considering its correlations with Efficacy, the values for Variety show a similar pattern. However, the coping modality indices show generally poor correlations across tests. Whether this is owing to unreliability of the measures or real evidence of changes within

Table 3.2

Test-retest Correlations
for Selected Variables

Variable	I1-I2	I2-I3	I1-I3
Coping			
Coping Efficacy	.45***	.40***	.23***
Coping Variety	.35***	.30***	.16
Coping Modes Index	-.01	.21*	.03
Total Coping Modes	.04	.40***	-.01
Questionnaires			
Beck Depression Inventory	.25**	.57***	.13
Spielberger Trait Anxiety	.66***	.59***	.45***
Hopelessness	.36***	.61***	.33***
Social Desirability Scale			.20*
Self-Depreciation			.11
Self-Esteem			.18*
Prison Locus of Control		.56***	
Prison Problems Scale		.60***	
Locus of Control, Internal			.13
Locus of Control, External			.60***
Specific Behaviors			
Average sleeping time	.44***	.37***	.35***
Proportion of time in work	.23**	.28**	.11
" " " socializing	.22**	.42***	.38***
" " " visits-letters	.62***	.46***	.45***
" " " passive ac'ty	.10	.10	.16
" " " sports-hobbies	.29***	.20*	.26**
Percent optional time in cell	.20*	.32***	.14
Number of friends	.40***	.53***	.42***
Number of letters	.38***	.56***	.31***
Number of visits	.36***	.63***	.18***
Frequency receive news	.53***	.48***	.46***
Frequency miss people	.36***	.46***	.27***
Frequency think of past	-.17*	.34***	-.26**
Rating of current life	.30***	.34***	.27**

* $p < .05$ ** $p < .01$ *** $p < .001$

individuals is unclear.

For comparison purposes, we also calculated test-retest correlations for a variety of other measures. These include questionnaire measures with known reliabilities, and other variables which were determined repeatedly. The correlations obtained across the three occasions are shown in Table 3.2. In most cases we see values like those for Efficacy, mostly intermediate in size and ranging from about .30 to .60. The correlations also seem to generally diminish across time, with the smallest values between the first and last interviews.

One anomaly appeared with the scores for the Beck Depression Inventory, where the correlation between the first and second interviews was much lower than in previous studies. Since this test was one of our primary measures of emotional state, further analyses were conducted to find the reason. The entire set of subjects was divided according to sentence lengths, into a Long group and a Short-Medium group. This division is an important one for the study, separating inmates as to whether they had any possibility of release within the approximate time frame of the three interviews. Within these subgroups the test-retest correlations on the Beck were much more substantial. For the Short-medium group, the correlation from the first to the second interview was .57, from the second to the third the value was .55, and from the first to the third it was .37. For the Long group, the values were .70, .60, and .65 respectively.

Thus, the anomaly disappears on closer inspection. For some reason, there is an interaction between sentence length and the BDI scores. Similar breakdowns were then done for several other major variables, but large interactions did not appear. However, the anomaly indicates that it is advisable to separate subjects according to sentence length, at least in some cases.

In summary, the obtained pattern of test-retest correlations indicates that the ordering of individuals across testings was only moderately stable, with significant rearrangement occurring during the course of the study. Therefore, most subsequent analyses will include variables from each of the interviews, i.e., when measures were repeated across interviews, all obtained values will be included as (more or less)

independent measures.

Effects of Social Desirability

Many of the measures used in this study were taken from self-report questionnaires. It is therefore possible that answers were contaminated by subjects' desires to give socially desirable answers, or to portray themselves in a favorable light. In anticipation of this, the Marlowe Crowne Social Desirability Scale had been included as a measure of tendencies to give socially acceptable answers.

Correlations were calculated between the Social Desirability (SD) scores from the final interview and all predictor and outcome variables which were based on self-reports. The resultant list of significant correlations is shown in Table 3.3.

As may be seen, a variety of measures were significantly correlated with SD scores, but the list contains a relatively small proportion of the correlations actually computed. In addition, almost all of the correlations are quite small, mostly on the order of about .20, and only a single one is able to account for as much as 10% of the variance in any measure.

It should also be noted that a majority of the correlations indicate SD effects which are statistically conservative, i.e., they tend to reduce the size of scores. This is the case for almost all of the negative correlations in the table. It appears that SD worked principally to reduce the reported frequency of some negative things (principally dysphoric states), more than it led subjects to exaggerate the occurrence of socially desirable attributes or events. The effect of such an influence would be to decrease the variance associated with particular variables, thus reducing their predictive usefulness. It is therefore unlikely that SD could lead to many false conclusions.

In summary, the infrequency, size, and direction of the obtained correlations all indicate that SD effects are negligible. This is as expected, since it is difficult to define what are the socially acceptable answers to many of our questions. Even if inmates had been inclined to answer with an SD bias, they could not have divined the "correct" responses. In any case, SD effects may be generally ignored in dealing with the data.

Table 3.3

Significant correlations of
Social Desirability Scores
with Self-report Measures (I1 and I2)

Variable	I1	I2
Interview measures:		
Proportion time in visits-letters	.21**	.18*
Proportion time in group meetings	.19*	.21**
Proportion time in passive activities	-.25**	
Number of visits	.19*	.18*
Attempts to control thoughts		-.30***
General plan for doing time	-.17*	
Frequency think of future		.19*
Frequency think of past	-.16*	
Frequency bored		-.26**
Have sleep problem	-.15*	-.19*
Questionnaire measures:		
Drug Frequency Index	-.20*	
Total Drugs Used Index	-.31***	
Self-depreciation	-.69***	
Self-esteem	.31***	
Hopelessness	-.27**	
Beck Depression Inventory	-.17*	-.21**
Prison Problems		-.20*
Checklist past week anxiety		-.26**
" " " guilt		-.22**
" " " depression		-.19*
" " " fatigue		-.21**
" " " confusion		-.29***
" " " anger		-.24**
Checklist 1 year future anxiety		-.20*
" " " " guilt		-.19*
" " " " depression		-.15*
" " " " fatigue		-.20*
Locus of control, external chance	-.18*	

* $p < .05$ ** $p < .01$ *** $p < .001$

General Descriptive Information

In this section we will discuss summary statistics for some of the measures which were taken, in order to give a general picture of the lives of the subjects in this study. Background and personal history factors will be considered first, followed by data on the lifestyle and behavior of our subjects outside of prison. For comparison, this will be followed by information about behavior within the penitentiary, with emphasis on changes across the three interviews.

In general, the statistics in this section will be descriptive rather than inferential. The arithmetic mean values will be presented except in those cases where the distribution of the measure was severely skewed.

In most cases, the information described here is based on inmate self-reports. File data were available for corroboration of responses to some questions, and this is indicated when reported below.

Background Information

Examination of the indices of general background shows a pattern much like that expected. Our subjects had a wide range of variation on most measures, and average values were similar to those seen in previous descriptions of prison populations. For example, the average age at the time of the first interview was just under 30 years, with a range from 17 to 63. About 10% were under 21, but the modal age range was from 21 to 30, this category included 50% of the sample.

A wide range of socioeconomic origins was included in the sample. Using the father's occupation as an index of social class, we find that 27% were in the lowest categories (no occupation or laborer), 45% worked in semiskilled occupations and only 24% had skilled, executive or professional occupations. An independent estimate of class origin was made by the investigators after reading background information available in the institutional files. This yielded overall values of 33% lower class, 39% working class, and only 28% of middle-class origin. Thus, both measures indicate that average economic class origins for our sample were lower than those for the population as a whole, but there were representations from

all classes.

Measures of racial and national origin show our subjects to be fairly representative of the general population in Ontario. Racially, 88% were Caucasian Europeans; among the rest only Native Indians appeared to be somewhat over-represented, with 6% of the sample. Eighty-seven percent were native-born Canadian citizens, 9% were naturalized, and the remaining 4% were foreign citizens; if anything, immigrants were under-represented in these figures.

In summary, these and other measures show little that is unusual in terms of basic social, economic, or political factors. However, examination of family and personal history does indicate some problems, e.g., while 62% lived with intact nuclear families between the ages of 6 and 11, 19% were in broken nuclear families, 8% lived with relatives other than parents and 10% were in foster homes or institutions. The last number is certainly higher than the figure for the general population.

There was also evidence for problems within the families during the early school years, i.e., at ages 6 to 11. Although files did not routinely contain assessments of family situations, we were able to obtain meaningful information for 35% of our subjects. In 70% of these cases marital problems, alcohol abuse or violence was specified. It is possible that omission of information in many cases indicates a lack of problems. However, this is certainly not always the case, since the inclusion in files of any items other than those relating to imprisonment is quite unpredictable. If we have clear indication of family problems in 25% of all cases, which in turn represent 70% of those cases for which information is available, it is likely that the correct figure lies somewhere between these two numbers.

There are other indications that subjects' criminality is at least partly attributable to their family histories. An impressive 29% had siblings who had been sentenced to imprisonment; when we correct for those who were only-born children, the value becomes 32%. The criminal careers of many of our subjects are clearly related to their families.

Thus, our background assessment indicates relatively little that is unusual in basic demographic factors, but there is some clear evidence of problems within our subjects' families. When we turn to examination of

personal history variables, more evidence of difficulties can be seen.

The level of education shows a mean grade level of 9.5, very close to overall figures for the prison population. However, the range was from 1 to 13, and 16% were no higher than grade 8, indicating problems for a significant minority of the sample. Less than 20% had completed high school, and 45% had never completed grade 10, a level commonly used to assess competency for employment.

Still, it appears that the grade level achieved is not a good indicator of earlier problems in school, as many of our subjects had raised their educational levels with the aid of prison programs. Therefore, we also asked the age of leaving school, and here problems are again evident: 10% of the sample had left school by the age of 14, and a total of 30% by the age of 16.

The lack of education was also reflected in job training and employment history. Only 18% had training at the level of a skilled trade or better. At the time they were arrested, 23% were working in unskilled occupations, 29% had semi-skilled jobs, and only 14% worked at skilled trades, managerial or professional employment; the largest group, comprising 34%, was unemployed. Eighty-three percent of the unemployed had not worked in at least a year; half of the same group had never worked at a single job for as long as a year. Even among those who were working, 44% had held their current job no more than 6 months.

The problems in training and employment were paralleled by evidence of some instability in personal relationships. Only 35% were married (legally or common-law) at the time they were charged, and while another 26% reported a "relationship" with a woman, 40% reported no current relationship at all. Of the entire sample, 20% had never had a relationship with a woman which lasted more than 6 months. This was not likely because of homosexuality; on being questioned about their lack of relationships with women, only 3 of our subjects declared themselves as homosexual.

Other social relationships were also frequently tenuous. When asked to specify the individuals in their family, only 33% mentioned nuclear generative families, i.e., wife and children. Yet, the mean age at which they left their parents' home was just over 17 years. Moreover, 52%

claimed to have fathered children, but only 20% actually lived with their own children. Many also seemed to move around frequently; for example, 29% had been in their current living arrangements for no more than 6 months, and a total of 47% for no longer than 12 months.

Thus, the personal histories of our subjects show much evidence of tenuous and unstable positions within the social structure. This does not appear to be predictable from socioeconomic factors, and many subjects had actually moved downward from their social origins. Rather, their problems seem more related to individual lifestyles. There will be much more evidence of this when we consider histories of maladaptive behavior below.

Previous Problems

Given the indications of deficient vocational training and education, and of the problems in social adjustment described above, one might expect to find that many of our subjects had some history of maladjustment and maladaptive behavior. In fact, 19% admitted to having been previously treated for psychiatric or emotional disorders. Since we had screened out individuals with current psychiatric problems, the above figure is probably a slight underestimate for the penitentiary population. Thirteen percent claimed that they had made a serious attempt at suicide. Given these two results, it is no surprise that 28% had been in institutions other than prisons, mostly psychiatric treatment centers.

There was also evidence of an overwhelming problem with drug and alcohol abuse. There was explicit mention of such problems in the files of 50% of the sample, which represents 73% of those for whom the relevant file data were available.

The full magnitude of the drug problem was visible in the Drug Use Inventory administered after the first interview. As would be expected, virtually all of the sample (91%) had used alcohol at some time, usually in several forms: 82% drank beer commonly, 68% used liquor and 32% drank wine.

However, the extent of reported alcohol abuse is impressive, even more than previous studies would lead us to expect. For the entire sample, i.e., even including nondrinkers, the mean number of drinking days per month was 15.1. (For simplification in equating frequencies we had set a

month as equal to 4 weeks or 28 days, so the given figure represents something over a majority of days.) Twenty-five percent reported that they drank every day.

In order to measure the amount of alcohol consumed, we calculated the Alcohol Abuse Index, which equates beverages for alcohol content. The median number of units per drinking session was 10.9 (equivalent to that many ounces of spirits). Seventy-seven percent of drinkers averaged at least 6 units per session, a level commonly used as evidence of alcohol abuse.

Using both frequency and quantity data to arrive at an overall estimate of alcohol usage, we obtain a mean value of 8.0 drinks consumed daily for all subjects. Although this figure is inflated because of the contribution of the heaviest drinkers, it indicates a problem even greater than previously documented.

Not surprisingly, alcohol use was also associated with subjects' criminal offenses. A total of 58% reported drinking on the day of their most serious offense, and 30% described themselves as drunk at the time of the offense. These figures must be taken cautiously, since some inmates may wish to diminish their responsibility by attributing their crimes to alcohol. At the same time, they are quite consistent with all of the other evidence on alcohol use, and may even be an underestimate given that several subjects refused to discuss the circumstances of their offenses.

Although alcohol was clearly the most abused drug, our Inventory also showed evidence of abuse of a great variety of other substances. Second to alcohol was cannabis, as would be expected, given its frequency of use in the general population. Eighty-one percent of the subjects reported having used cannabis at some time, with 34% using it on at least half of all days and 23% using it daily. For the entire sample, the average frequency of use was 12.5 days per month. These numbers are lower than those for alcohol use, but not greatly so. Again, as in the case of alcohol, there seems to be some association with offenses, as 38% of inmates reported use of cannabis on the day of their offense and 20% said that they were "high" at the time of the offense.

Finally, substantial proportions of the inmate sample had used a variety of other drugs. A summary of the data can be seen in Table 3.4.

Table 3.4

Frequency of Drug Use
(excluding alcohol and cannabis)

Drug	Ever Used? (%)	Frequency (month)*	Daily use (%)
Speed, amphetamines	39	7.8	8
Opiates	20	10.7	6
Cocaine	32	3.5	2
Hallucinogens	35	3.7	2
PCP	21	1.4	2
Tranquilizers	35	10.9	10
Solvents	5	1.3	1
Others	3	1.0	-

* Frequencies for users only

Out of the 8 additional types of drugs specified in the Inventory, the mean number used was 2.7, with a range from 0 to all 8. Of the entire sample, 25% said that they had used one of the specified drugs on the day of their offense.

As an overall index of drug use, we calculated the Drug Frequency Index, as explained in the Appendix E. The median value was 28.4, indicating that the majority of subjects used one substance or another at least daily.

The amount of abuse of both alcohol and other drugs by the subjects in this study was quite considerable. Although the quantitative information obtained from the Drug Use Inventory cannot be easily corroborated, it is consistent with other evidence from the study, especially descriptions of coping with problems, as will be discussed below. Clearly, the problem is a major one. Such abuse of drugs indicates substantial problems in coping with problems and also presents great disruption of all other aspects of daily living.

Criminal offenses

Problems in living are likely to lead to maladaptive behavior, at least some of which will be antisocial, violent and illegal. Therefore, we would expect that problems such as those seen above would result in criminal convictions. Many of our subjects had extensive histories of such

Data on previous criminal offenses and terms of imprisonment was obtained both directly from subjects and from information on institutional files. There was substantial agreement in most cases. However, there were differences in about 5% of the cases, almost invariably because the files indicated lower values, i.e., less previous criminal history. Several inmates admitted to having criminal histories outside of Canada, or under different names; these would not be included on the FPS or institutional records. For these reasons, values reported for most variables are those from the interview self-reports.

Only 28% of the sample had never before served time in prison. Sixty-eight percent had served sentences in reformatories or equivalent institutions, i.e., sentences of less than 2 years. For those who had served such terms, the mean number of terms was 2.9, and the average total time served was 25 months. Of the entire sample, 32% had previously been

in penitentiaries, for an average of 1.7 terms and a mean total of 41 months. When these figures are combined, we arrive at a value of about 47 months for the average of previous imprisonment for all inmates in the study. The mean number of total convictions was 12.5, including the current offenses.

Not only did many subjects have extensive previous backgrounds of imprisonment, but they had often started early on their careers of delinquency. The age at which the first behavior problem was recorded was sometimes indicated in files: the mean age for such cases was 13.9. For all subjects we also determined the age at the first entry in the FPS record, i.e., when the first adult criminal charge was laid. The median value for this statistic was 18.0 years, quite low considering that offenses committed at ages below 16 are not included in the records.

For the current offenses there were a variety of charges. About two-thirds had been imprisoned for violent offenses, including 25% with convictions for murder or manslaughter. Robbery or assault included 41% of our subjects, 13% had been convicted for theft or other property offenses, 11% were imprisoned for narcotics charges, and the others fell into a number of other categories. The distribution of sentence lengths was as arranged by initial selection, viz., 45 subjects with terms from 2 to 5 years, 47 with terms from 5 to 10 years, and 41 with terms of 10 years or over. Within the Long-term group, 28 inmates had life sentences, for which the date of expected release is of course indeterminate.

Lifestyle and Behavior Outside of Prison

In the initial interview, one section was designed to provide information on subjects' lives outside of prison. For the questions in this section, we asked inmates to recall their lives outside of prison in the 6 months prior to being arrested. A few had been released from prison less than 6 months prior to their last arrest; in these cases we asked them to use periods as short as one month. Since subjects had been arrested a median of about 5 months before the interview, the reliability of recall is likely to have been somewhat imperfect. However, some interesting consistencies appear in the results.

Among the questions in the initial interview were a set which asked

subjects to specify the amount of time spent in a variety of types of activities in the community. The mean times, converted to a daily basis for all categories, are shown in Table 3.5. The total amount of time specified adds up to almost 25 hours, partly because of rounding errors, but this figure is excellent, given that subjects were asked to specify time in each category independently of the others and without regard to the totals. It is likely that these figures summarize well how our subjects spent their time.

It can be seen that the greatest amount of waking time was spent in socializing with friends. This was greater than the mean time spent working, understandably so given the number of unemployed subjects. (If we calculate weekly working hours for those who were employed, the total was just over 40 hours.) Considerable time was also spent in passive-spectator activities, but family activities and duties were only fourth on the list. The amount of time spent in sleep was slightly less than average, although 40% reported sleeping habitually during the day.

In general, this suggests an average pattern which was somewhat loose and unstructured. It fits well with our impressions of the way that subjects spoke of the patterns of their lives: most of them described spending their time rather than using it, with the company of others doing similar things. The picture is reinforced by other information gathered in the interview.

Most subjects had a network of friends with whom they spent much of their time. Only 15% reported living alone, and even some of those were living in supervised settings such as halfway houses. The mean number of friends specified by our subjects was 5.0. Thus, there appears to have been a small minority who lived on their own, but most were anything but loners.

The dependence on social contacts provided links to the criminal subculture. Half of the sample had friends who were engaged in criminal activities (of course, often in the company of the informant). Among the wider circle of acquaintances, the mean estimate was that 50% were involved in criminal behavior; only 22% said that none of their acquaintances were criminals.

There was little planning or anticipation of time, but rather a mode

Table 3.5

Time Usage Outside of Prison

Category	Mean daily hours
Sleep	7.0
Work, education or training	4.1
Socializing	4.3
Passive activity (TV, radio, listening to music)	3.8
Family activities and duties	3.3
Sports and hobbies	1.1
Other	1.3
Total	24.9

of living restricted to the present moment. Eighty-three percent said that they lived day by day, and did not plan their time. We had them rate the frequency with which they had thought of past, present and future on a scale from 1 to 5, where 1 represented "all the time" and 5 was "never". The mean values were 2.76 for the present, 3.09 for the future and 3.32 for the past. Even daydreams were not all that common: 45% reported daydreaming never or rarely, 30% specified "sometimes" and only 24% said that they daydreamed most or all of the time.

The existence in the present was not accompanied by an insularity or lack of interest in the environment. Seventy-one percent reported keeping up on the news. On the average, subjects listened to the news on TV or radio 4.9 days out of the week, and read newspapers almost as often, 4.7 days weekly.

While this lifestyle was not seen as ideal, it also seemed to provide little incentive to change. Forty-seven percent felt that they had been satisfied with their lives on the outside; of the others, few had made any real efforts to change things.

Our questions also included reports of the frequency of various emotions experienced on the outside. The mean frequency of both depression and anger was 2.6 episodes weekly, with anxiety higher at a mean of 3.4. While these values indicate that the average subject was far from placid, they also show no great amount of disturbance for most.

Thus, the average pattern shown was one of casual unplanned days, with greater dependence on friends than family or work, and little focus or goals. As described above, this way of spending time was also accompanied by a constant high level of alcohol and drug use. Many subjects must have gone through their days in a haze, and it is not surprising that there was little planning and few efforts at changing anything. Given this set of behaviors, and this pattern of living, one might expect that many of our subjects would have had significant problems in dealing with the inevitable problems in daily life.

Problems Perceived on the Outside

In order to provide information on subjects' perceptions of their lives on the outside, we included a series of questions aimed at surveying the situations which they experienced as problems.

The entire set of specific and nonspecific questions resulted in a set of possible problems for each subject. They then ranked the items elicited, in the order of their perceived importance as problems, with up to 5 items in the list. There was no minimum number. This procedure was used both to ensure that all entries were really experienced by the subject as problems, and also as the basis of the analyses of coping behavior carried out subsequently.

It was clear that inmates are able to specify and rank their problems in this fashion without much difficulty. Only 2 of the 133 admitted to no problems on the outside; at the other extreme, only about one in six had specified 6 or more, indicating that our cutoff of 5 was a fortuitous choice. The mean number of problems included in the list was 3.8.

Interestingly, the great majority of listed problems were chronic rather than episodic. Probably this was the result of the way our inquiries were constructed. There may be interesting comparisons with other studies (e.g., Kanner, Coyne, Schaefer and Lazarus, 1981) which have concentrated on coping with episodic events.

After inspection of the lists generated, we compiled a set of commonly mentioned problem categories, and then counted the number of times each category was listed. In the few cases where subjects had specified two closely related problems which fit within the same category, only one was counted. The list of the 10 most commonly specified problems with their frequencies is shown in Table 3.6.

There is clearly some commonality across subjects in the problems experienced. A total of 74% of all problems listed were included within the 10 categories shown, 54% within the top 5.

Although we do not have comparable data for other populations, this set of data indicates to us that the problems seen by inmates in their lives outside of prison are principally like those experienced by most people. Some of the problems on the list reflect the lifestyle described

Table 3.6

Frequent Problems for Inmates
Previous to Imprisonment

Category	Frequency	Percentage
1. Fights or arguments with wife or girlfriend	78	59
2. Money/financial difficulties	65	49
3. Conflicts with friends	52	39
4. Dissatisfaction with current lifestyle	45	34
5. Police or parole inquiries or restrictions	32	24
6. Loneliness or depression	30	23
7. Problems at work	27	20
8. Drug or alcohol use	18	14
9. Unemployment or lack of suitable employment	16	12
10. Lack of future direction or goals	11	8

in the previous section, but only one (number 5) is likely to be specific to those with criminal lifestyles or histories.

Interestingly, two of the three top problems are concerned with social relationships, while goal-related concerns were mentioned much less frequently. This again shows the relative importance of these areas for most inmates. Nevertheless, in general the problems listed are not dissimilar in kind to those which clinical psychologists commonly deal with. Outside of prison, criminals must cope with the same sorts of problems as everyone else.

Coping with Problems on the Outside

This project was conceived primarily as an analysis of how people respond to stressful situations. From the present theoretical perspective, it is not necessary for an environment to be unusual or particularly difficult for an individual to have trouble dealing with it. Rather, what differentiates maladaptive behavior from successful coping is the way in which people respond to the problems they encounter. Therefore, the similarity of inmates' problems to the common lot only emphasizes the importance of looking at the quality of coping behavior.

Three problems were chosen from the inmate's list for the coping analysis. Usually, the highest ranked problems were picked, but where some of these were very similar, e.g., problems in getting along with a wife and also arguments with a brother-in-law, one was omitted and a problem lower on the list was chosen.

For the coping analysis a comprehensive series of questions had been included in the interview, as may be seen in the interview protocols. These questions were based on prior notions about the likely types of coping responses. Included were inquiries about direct emotional responses to situations, palliative responses to emotional disturbance, escape, avoidance and substitute responses, and problem-oriented attempts to solve the problem presented.

However, it soon became clear that subjects did not respond to our questions with answers which corresponded to the categories of the questions. That is, if we asked about attempts at palliation they might tell us about these, but they were also quite likely to tell us instead

about behaviors we would class as avoidance responses. In general, responses in every category were at some time given to each of the questions in the protocol. It appeared that subjects did not functionally differentiate between the categories used. If inmates do have some implicit organization of response categories which is applicable to problem situations, it is not like the functional classification which we employed to generate our set of questions.

Nevertheless, we still found it useful to retain the original series of questions. The purpose of the entire set was not to elicit particular categories of responses, but rather to evoke the complete set of behaviors which each subject performed in response to a particular problem. Since they did not seem to differentiate among the different categories our series of questions were based on, they commonly acted as though the different sorts of inquiries were repetitions of the same question. Thus, the recitation of the series helped to elicit a rich and varied series of responses to the situation. Therefore, we typically asked most of the questions in the protocol, except where a particular form of inquiry seemed inane or contradictory, e.g., asking a person who was suffering from terminal cancer whether he had tried to find a solution to the problem.

The entire set of responses generated was rated on several scales. Briefly, the responses for each problem were rated for both benefits (positive effects) and risks (negative effects). These were later combined and averaged across problems for each inmate, to yield overall Efficacy scores. The sets of responses for a given individual - in most cases, three - were considered together to arrive at a rating of Variety and appropriateness. Finally, the entire set of responses across situations was also used to determine which modes of coping an individual had used, from a list of 11 possible categories. This latter rating yielded the Total Number of Modes used by each subject, and was also used to calculate the Coping Modes Index, which assigned scores according to assumptions about the value of different categories of responses. Details about the rating scales are included in Appendix D.

The results from these scales are of considerable interest. First, one is struck by the overall poor level of coping in response to problems in outside life. On the benefits scale, the mean rating for all subjects

was 2.36. Since the scale runs from 1 to 5, this indicates a level of effectiveness between "ineffective" and "of some limited use", and closer to the former.

A few examples of typical responses may provide some elucidation of the ratings. The most common way of dealing with marital problems was to leave the scene. While this may be useful in reducing momentary arousal, it was rarely followed by any further actions which would help the situation; it would ordinarily be assigned a rating of 2 or 3, depending on other responses in the same situation. Overall, the most common reactions were to take alcohol or drugs. These may produce some momentary improvement in the level of feeling, but they have little benefit for the morning after, and even present associated risks of exacerbating problems (see below); the likely rating would be 1 or 2.

Comparable ratings for the general population are not available, although a study by Haley (1983) using the same scales yielded mean values of about 4.0 for a group of university students. Nevertheless, the scores obtained here indicate substantial deficiencies in coping among penitentiary inmates: as a group, they are clearly very poor at generating behavior which alleviates stress for problems on the outside.

A similar conclusion can be drawn from the results of the risk scale. Nonzero scores on this scale indicate that subjects responded in such a way as to increase the likely deleterious effects of problems. From the entire sample, 70% of our subjects had nonzero scores for at least one of the three problems examined. If we consider only the single problem considered most serious by the inmate, 54% had negative scores.

Some of the large number of negative scores are clearly related to the fact that we are dealing with people who have committed criminal acts in attempts to deal with their problems. Thus, many subjects committed robberies as a way of dealing with their need for money. This would usually be assigned a positive efficacy score of 3 or 4, since it does help the problem situation at least temporarily, but it would also produce a risk of worsened circumstances, viz., arrest and imprisonment, so it would be assigned a risk score greater than zero.

However, many - and probably most - of the behaviors which were assigned nonzero risk scores were not specifically criminal in nature. An

appalling number of our subjects reacted to common situations in ways that clearly indicated a lack of coping skills, e.g., attempting to solve disagreements by attacking someone, reacting to harassment by trying to "get even", dealing with a lack of money by throwing parties to help forget, dealing with troubling thoughts by taking drugs, responding to all problems with anesthetic doses of alcohol. Clearly, our subjects showed a lack of foresight in considering the consequences of their actions, as well as a lack of ability to generate and weigh alternatives.

In order to provide a composite index of coping, the benefits and risk scales were combined into the Efficacy measure. In the combined scale, values from 1 to 20 were possible, although values below 4 were extremely unlikely. The mean score of 8.0 thus shows the overall poor level of coping.

Some further evidence is provided by the results from the Variety scale. The mean score was 2.55, midway between "poor" and "mediocre". In general, subjects seemed to adopt a particular type of behavior and then use it regardless of the situation. Many chose to avoid all of the situations we considered. Others tried to deal with problems but with a very limited array of responses, e.g., regardless of the situation they tried to solve it by talking to someone about it. Rarely was there evidence of a variety of possible responses from which those appropriate to particular situations could be selected. And again, many subjects dealt with every situation by the stereotypical action of getting drunk or stoned (13% received Variety scores indicating this).

The last measures of coping take into account the functional types of responses made by each subject. First, the mean Total number of Coping Modes was 3.6, with a range of 1 to 7. The total is not likely to be a particularly meaningful statistic, since a high number may reflect only the presence of similar types of responses, e.g., escape and avoidance.

Therefore, we calculated the proportions of subjects who used each of the individual modes of coping, shown in Table 3.7. Every subject at some time used the Reactive Problem-oriented category, showing concrete or casual attempts to deal with problems. In contrast, deliberate and persistent problem-solving behavior (Anticipatory Problem-oriented) was uncommon. Other higher-level strategies, such as those involving cognitive

Table 3.7

Coping Modes Used
(at each assessment)

Category	Percentage of subjects using			
	Outside	I1	I2	I3
Anticipatory Problem-Oriented	13	16	9	10
Reinterpretive Re-evaluation	7	23	35	35
Reinterpretive Self-control	10	32	19	31
Substitution	12	18	23	19
Avoidance	46	50	51	47
Escape	30	61	55	55
Palliative	52	62	75	85
Social Support	32	21	25	27
Drug-taking	64	3	15	8
Reactive Problem-oriented	100	96	96	98
None (giving up)	2	8	4	4

reorientation or reevaluation, were also unusual.

In order to provide a statistic which indicates the highest-level responses shown by each subject, the Coping Modes Index was computed, with possible values from 0 to 4. The mean score on this variable was 2.7, showing that even the best responses for most subjects were far from optimal.

From all of the statistics in this section we are led to the conclusion that most of our subjects had a great deal of trouble coping with life outside of prison. They were poor at adopting responses which can ameliorate their problems, they often increased their difficulties by the behaviors which they chose, and many of them responded in habitual or even stereotyped ways despite the nature of the problem. In general, they had an inadequate repertoire of possible coping responses, especially those involving higher-level strategies. With these data one might have predicted that some sort of major maladaptive consequences were almost inevitable for many of them: if they had not been imprisoned, some other calamitous events would have occurred.

At the same time, some subjects managed to cope reasonably well. For example, about 11% had mean scores on the benefits scale of 3.5 or better, representing superior coping ability. Therefore, it will be possible to consider what factors are associated with good and bad coping, and also to what extent differences in coping behavior will lead to differences in subsequent adaptation. Such analyses will be presented in later sections.

Lifestyle and Behavior in Prison: First Interview

In the last part of the first interview, the inquiries about specific behavior and coping outside of prison were substantially replicated for the case of life inside of prison. Changes were made in order to conform to the differences in circumstances, and to gather some information about behaviors unique to life in prison.

A list of time spent in several categories of activities is in Table 3.8. In addition, Table 3.9 shows values for a number of other descriptive measures. For some types of behavior the results are most interesting. Although the mean time spent sleeping was virtually the same as the mean for outside of prison, there was an increase in the frequency of reported

Table 3.8

Time Usage in Prison
(mean daily hours per category)

Category	I1	I2	I3
Sleep	7.1	7.1	7.3
Work, education or training	4.4	4.4	4.6
Social activities	3.7	4.2	3.3
Passive activity (TV, radio, etc.)	2.9	4.3	4.1
Sports and hobbies	1.7	1.5	1.8
Letters and visits	0.8	0.6	0.6
Group meetings	0.2	0.3	0.3
Other	1.8	1.7	1.4
Total	22.6	24.1	23.4

Table 3.9
Summary of Principle Descriptive Measures

Variable description	I1	I2	I3
Friends			
Do you have any friends here (%) Yes)	60	70	61
Mean number of friends (all subjects)	1.7	2.2	1.5
Percentage of friends met this term	46	43	63
Socialization pattern			
Stay on my own (%)	43	38	57
With a few friends (%)	32	35	29
In a larger group, or floating (%)	22	22	14
Employment			
Do you have a job (%) Yes)	96	93	95
Hold job for self-improvement (%)	60	45	33
Rating of job (0-100)	--	71	76
Letters and visits			
Letters received (month)	3.4	12.4	12.5
Letters desired (month)	6.3	19.4	19.9
Number of correspondents	--	4.8	4.8
Visits received (month)	1.0	1.9	1.3
Visits desired (month)	2.2	4.7	2.9
Outside news reports			
Frequency listen to news (week)	4.9	4.4	5.4
Frequency read news (week)	2.7	2.5	2.8
Plans			
Have general plan for doing time (%)	84	86	88
Live day-by-day (%)	79	76	80
Have goal to accomplish (%)	80	68	62
Describe self as doing time	40	--	56
" " " gleaning	52	--	31
" " " jailing	9	--	12
Thoughts			
Frequency think of past (1-5)	3.1	--	--
" " " " (month)	--	12.0	10.4
Frequency think of future (1-5)	2.5	--	--
" " " " (month)	--	17.5	--
" " " " in prison	--	--	5.7
" " " " outside	--	--	15.7
Frequency of daydreams (1-5)	3.0	2.9	2.8
General appraisals			
Rating of life at present (0-100)	35.4	38.5	37.2
Specify no positive things here (%)	36	39	35
Emotions			
Frequency of depression (week)	3.1	2.9	2.2
" " anxiety "	3.1	2.4	1.9
" " anger "	2.2	2.3	2.3
" " guilt "	1.5	1.3	0.5
" " loneliness "	--	4.0	4.1
" " boredom "	--	3.5	3.5
Spielberger State Anxiety Inventory	46.0	43.3	41.6
Beck Depression Inventory	13.0	10.1	10.4

sleeping problems. Thirty-two percent had a problem inside of prison, but had not had one on the outside, while the converse was the case for only 8%. In the great majority of cases the problem was reported as difficulty in falling asleep, typically because of the presence of arousing or troubling thoughts. This is evidence of at least a temporary increase in emotional difficulties.

Within the category of work, the total of 31 hours per week represents basically full employment, since the institutional work week is nominally 32.5 hours and really a bit shorter. Ninety-six percent of the subjects were employed, with the largest number, some 38%, in educational programs, and another 34% in training or trades programs.

Aside from work, the greatest amount of time was spent in socializing with other inmates. The mean amount of time in activities of this sort was nearly as much as that outside of prison. The majority felt that they had enough friends, but overall the mean number of friends specified was only 1.7, somewhat lower than the number on the outside. The difference may be at least partly explained by noting that 46% of the sample specified that their friends had been acquired during the current term. One might expect that it takes some time to establish friendships, and there had been only a limited time in the current institutions to do so.

We also asked inmates to indicate their usual pattern of socialization from among a set of alternatives. Forty-three percent specified "on my own". Another 32% chose "with a few close friends", while only 22% specified larger groups. This seems to accurately describe their actual behavior.

Social needs at the time of the first interview were also not very much helped by contacts with the outside, as may be seen in Table 3.9. Letters were infrequent, with only 22% getting at least one a week. This was about half of the number desired, with 37% wanting more letters than they received, and only 5% desiring less. The number of visits was also low, with 39% receiving none and only 25% receiving more than 1. Again, the number desired was about twice as high.

Other evidence also indicates a common desire for contact with outside life. The average frequency of listening to the news on TV or radio was identical to that for the outside, with only 27% not listening at all. The

frequency of reading newspapers was reduced from that on the outside, but newspapers are not freely accessible in most institutions. Given that they are often available only twice weekly, the value in the table indicates a reasonably high rate of utilization.

It appears that at the beginning of the term many inmates had only limited social relationships. At the same time, they spent a substantial amount of time in socializing, much of it in the company of new acquaintances. During free hours when they had the choice, it was not common for subjects to stay by themselves in their cells. Only 20% stayed in their cells more than half of the available time, and the majority of these clearly stated that this was in order to do some specific activity, e.g., studying or reading. About half said that they stayed in their cell no more than 10% of the available time.

Most subjects were very much dependent on social activities on the outside. If their social contacts were limited at the beginning of their prison terms, we would expect that the amount of casual socialization they engaged in might soon lead to the development of new friends and relationships. Despite differences from the outside, the environment in the penitentiary allowed inmates to re-establish on the inside much of the pattern of their outside lives.

Still, examination of subjects' plans for their terms does indicate some attempts to change and improve themselves. Eighty percent said that they had a goal to accomplish during the term, with 75% of these specifying either education or job training. Of the total sample, 58% said that they saw self-improvement as the primary benefit of their job or training program. When we asked them to assign themselves to one of three categories of inmates described by Irwin (1970) 52% identified themselves as "gleaners", i.e., working to better themselves while they had the opportunity.

All of these indicate a common positive expectation about the results of their imprisonment. Our subjects were also quite hopeful about early return to the outside. When questioned at the first interview, 42% claimed that they were appealing either their conviction or the sentence. Despite the actual rarity of successful appeals, those who were appealing estimated their chances of success on the average at about 62%. For many subjects,

belief in the magical deliverance of an appeal was an important way of coping with their situation. For others, the appeal was a diversion and one of the few ways they could exert any control on their lives.

Aside from appeals, subjects also were very optimistic about their chances of early release. The average estimate of the chance of release at the earliest possible date (one-third of the sentence, or the specified minimum for those with life terms) was 60%. The median inmate expected to serve only 37% of his actual sentence.

While they were thus optimistic about benefiting from their experience and gaining early release from prison, the inmates in this study were not happy with the conditions they faced in their institutions. When asked to rate their lives on a scale of 0 to 100, the mean rating was only 35.4. Only 20% gave ratings above 50, while 27% were no higher than 10. When asked to list positive aspects of their imprisonment, 36% could find nothing at all, and another 21% mentioned only educational and training opportunities.

Perhaps this is because their terms were longer than expected, as was the case for 63%. Many had not expected to be sent to prison at all. In any case, they felt quite dissatisfied with their current lot, but hoped vaguely that the experience would be for the better.

However, it seemed unlikely that real changes would occur for many, for good intentions and vague expectations do not provide the means for significant changes in behavior. Although 91% said they had plans for the future, the great majority were vague, unclear or unrealistic. Indeed, most subjects thought about the future infrequently, even less so than on the outside. Despite their hopes for the future, 79% still lived day by day, rather than planning. As in the case of social behavior described above, their old behaviors related to planning and the use of time seemed well established, and one would expect that vague hopes for the future would soon be forgotten without significant behavioral changes. Hopes without means are of little consequence.

For other reported behaviors there was little change from the outside. There was no great change in the frequency of daydreaming, or in the basic emotional states on which we have comparative data, although it is interesting that the reported frequency of guilt feelings was about a third

higher on the outside. Prisoners may often undergo many dysphoric emotions, but rarely does imprisonment induce in them much guilt or remorse.

Problems Inside of Prison

As for the outside, we obtained a list of problems for each inmate, ranked in the order of importance. Although the actual items in the inquiry were quite different, the procedures were comparable to those used to derive the lists for life outside of prison.

In general, inmates found it easy to specify problems in prison life; all were able to list several problems and the mean total of listed problems was about 20% higher than for the outside. This may of course reflect only the greater currency and recency of problems within the institutions, or it may show that the environment in prison was really more stressful.

As with the outside problems, we used the lists to generate a set of categories which included commonly listed problems. The types of problems are quite different from those on the outside, as may be seen from Table 3.10. Almost all of our subjects were troubled by missing people from the outside, and for most of them this concern ranked near the top of their lists; clearly, this category dominates the choices, and it was far more frequent than any on the outside. The second most frequent category, the loss of freedom resulting from imprisonment, was included for almost half of the subjects.

After these two problems there is a great dropoff in frequency. Of the 10 other most commonly listed problems, 7 are specific to conditions inside the institutions, and the other 3 involve troubling thoughts of various kinds. The types of problems expressed by our sample of subjects are quite similar to those expressed by British and American prisoners in other studies (Flanagan, 1980; Richards, 1978).

Item listed in Table 3.10 are useful as feedback for institutional management staff. On the whole, inmates seemed to feel that basic necessities were adequately provided for. For example, there were relatively few complaints about food. Also, many of the problems with environmental conditions were probably unavoidable given the ordinary physical arrangements in penitentiaries. However, some other services were

Table 3.10

Frequent Problems in Prison
(Interview 1)

Category	Frequency	Percentage
1. Missing family or friends	107	82
2. Missing freedom	57	44
3. Lack of desired programs or facilities	14	11
4. Regrets or troubling thoughts about past	40	31
5. Boredom	33	25
6. Conflicts with other inmates	41	32
7. Concern re future, esp., life after release	40	31
8. Cell conditions (lack privacy, noise, etc.)	23	18
9. Lack of staff support or help	18	14
10. Problems in medical services	19	15
11. Miss specific object or activity	45	35
12. Concern about personal safety	16	12

more of a problem, particularly medical services. Problems were mostly not with the quality of treatment, but with slow responses to requests for attention and poor availability of medical services.

Coping Inside of Prison

The analyses of coping in prison also show clear differences from the results for the outside. As before, we questioned each subject to get his responses to high-ranked problems, and then rated the responses on the same scales.

In contrast to the poor coping shown on the outside, the levels of efficacy shown for problems within prison were reasonably good. The mean value on the benefits scale was 2.92, very close to "mediocre", and clearly higher than the value for outside coping. We stratified scores into three groups: poor copers include those with mean scores of 2.5 or less; mediocre copers have scores from 2.5 to 3.5; and good copers are above 3.5. Using these criteria, 45% of the sample were classed as poor copers on the outside, but only 17% on the inside. Only 12% qualified as good copers on the outside, but 38% on the inside.

One can see an even more impressive change in the ratings of risk, i.e., scores for responses which make things worse. While 70% of inmates showed nonzero scales on at least one problem for outside behavior, only 14% had any for inside problems.

Since the overall Efficacy score is the product of the two scales described above, we would expect it to show much higher values for behavior inside of prison than outside. The mean value was 11.6, as compared to the former value of 8.0. The difference is statistically significant ($t=11.50$, $p<.001$).

These changes probably result from several differences between imprisonment and outside life. Within the penitentiary, the range of possible actions open to an individual is limited compared to what is possible outside. As can be seen above, most of the problems that inmates see as significant within prison are the results of either institutional conditions or of the constraints imposed by the fact of imprisonment itself. In the same way, the actions available to inmates are constrained, and many of the ineffective, diversionary, or destructive actions they

might take on the outside are precluded.

This is of course particularly evident in the risk ratings. Looking at the behaviors involved, it is clear that most of the damaging responses available on the outside (e.g., get drunk until I can't remember the problem, try to intimidate parole officers who don't give me what I want immediately, hit the wife who argues with me) are either very difficult or very dangerous inside.

However, imprisonment does more than simply to prevent counter-productive coping responses. While an inmate can still avoid a problem, or deal with it ineffectively, it is more difficult to avoid dealing with it in some fashion, because the institutional world is so confined and restricted. An inmate's problems in prison are inevitably part of his daily life, and they must be encountered regularly.

Some of the constraints are reflected in the functional classifications of coping responses seen in Table 3.7. Aside from low-level problem-oriented responses, which were almost universal, the most common response on the outside was drug or alcohol ingestion. Within the constraints of imprisonment, this is more difficult. In its place, subjects seem to switch to attempts to escape from facing or thinking of problems, and to palliate their unpleasant emotional effects. While these are hardly optimal ways of dealing with sources of stress, they are clearly superior to drug-taking. Indeed, in the context of the often insoluble problems seen during imprisonment, escape, avoidance and palliation are often reasonably effective means of handling situations. In addition, there was a considerable increase in the use of strategies of cognitive re-evaluation in prison, and these are of a higher level than those reported for coping outside of prison.

Thus, the constraints of imprisonment can paradoxically make it easier for inmates to cope relatively more effectively with problems. If this is so because they are not free to cope so badly in prison as they do on the outside, it is nevertheless the case. Since our ratings of the efficacy of coping were based on the usefulness of responses relative to the circumstances of the problem, values are bound to be higher under the constraints of prison. This does not mean that inmates only appear to cope better because their problems are easier, or that their behaviors only look

better when measured against insoluble problems, but that the responses which they make are more appropriate in prison than outside, and that imprisonment prevents them from taking many inappropriate or damaging actions.

In these ways, the restrictions of imprisonment ensure that many inmates who cope poorly on the outside will do better inside of prison, and the mean level of coping is understandably higher. Still, one might argue that the same restrictions ultimately limit coping ability, because they make it difficult for inmates to develop superior responses and strategies for dealing with problems. In many areas, imprisonment weakens the normal contingencies between actions and consequences. For example, modern prisons ensure the provision of basic needs, almost regardless of behavior. This dissociation between behavior and ensuing events removes much of the feedback for poor coping and the impetus for change. In effect, inmates are insulated from the demands for choices and decisions which ordinary life imposes, and one cannot easily learn to deal with situations without experiencing them.

While the effects of these factors may not be very obvious in prison, they should have their greatest effect on inmates after release. If we are correct, then one might expect that imprisonment would not be beneficial to the ability to cope with life on the outside, and it might even be deleterious. One testable prediction is that those with the greatest experience in prison would be the least effective in coping outside of prison. Some evidence for this will be considered later.

Emotional Adjustment at the First Interview

In addition to the measures of coping behavior, some evidence of the initial state of adjustment of our subjects should be considered. A variety of measures were provided in the initial set of questionnaires, but only two will be considered here.

First, there was clear evidence of a certain amount of depression. The data for the sample as a whole showed a mean score on the Beck Depression Inventory of 13.0, near the top of the "mildly depressed" range and close to the score of 15 which is considered diagnostic of mild clinical depression for an individual.

What is more disturbing is that 29% of subjects had scores in the "moderately depressed" range and a further 8% had scores classed as "severely depressed". Those with scores in the former range are usually considered to be in need of treatment. In the latter range treatment is imperative; such individuals are commonly hospitalized.

The incidence of severe depression in the overall sample was about 8 times that in the general population, and that for moderate depression was about 5 times the normal rate. Given that this level of depression can be seen early in a term, and given the high incidence in prison of some of the common consequences of depression. e.g., severe illness and suicide, we believe that an indicator such as the Beck should be routinely used at entry for identification of those at risk.

Another commonly used indicator of emotional state is the Spielberger State Anxiety Index. On this scale, the mean score for our subjects was 46.8. The original standardization of this test (Spielberger, et al., 1970) included means for several groups, one of which was a group of prison inmates with a mean of 46.0. Our figure is obviously very close to this standardization value.

However, it should be noted that the mean score for the inmate group reported by Spielberger et al. was much higher than that for a group of university students (36.3) and close to that for a group of psychiatric patients diagnosed as suffering from anxiety reactions (49.0). The figure obtained here thus indicates that a substantial number of our subjects had elevated anxiety scores; in fact, 41% had scores above the mean level for the anxiety reaction patients. On this evidence we may conclude that a clinical anxiety problem existed initially among the inmates in this study, as well as a similar pattern of depression.

Lifestyle and Behavior in Prison: Second Interview

Fourteen to sixteen weeks after the first interview, most of the same questions about life in prison were asked again at the second interview. A few questions were modified to yield better information, and a few were added.

In general, inmates seemed to have settled into regular patterns of living within their institutions by this time. On most indices there was

little change from before, although average values on some significant variables did change from the original levels: mostly, these show trends which were predictable from the first interview. Mean values for a variety of measures are included in Table 3.9, which also allows comparisons with values for the first interview.

To begin with the allocations of time, one can see from Table 3.8 that most categories changed little from the first interview. Only the time devoted to passive activities showed a substantial difference, with an increase of close to half of the original figure; the change was statistically significant ($t=2.74$, $p<.01$). There was also a (nonsignificant) increase in the amount of time spent in socialization. These increases were mostly not compensated for by decreases in other categories, although some showed small drops, but rather by an increase in the total time specified.

Most inmates (93%) were in jobs or training programs at this time, although 43% had changed situations in the time since the first interview. The percentage of subjects who held their position for self-improvement had dropped from 60 to 45, and more positions were chosen for their advantages within the institution than previously. In this interview, we asked subjects to rate their jobs on a scale from 0 to 100. The mean rating was 71, showing that most were quite satisfied. Indeed, many remarked that their work was the most rewarding part of their lives, and a substantial number would have liked more work to do.

The proportion of available time spent in their cells was unchanged, and 60% of the subjects indicated that even the limited time they did spend in their cells was in order to do some specific activity which could not be done outside, e.g., writing letters. However, there did emerge a clear association with problems: 35% said that their cell time increased when they were having a problem. Retreat to their own space seems to have been useful in coping, at least for some inmates.

If the general pattern of life remained unchanged, the amount of contact with other inmates showed an increase, with changes on virtually every indicator. The mean number of friends was up by about 30%, with the difference almost reaching statistical significance ($t=1.87$, $p<.06$). Similarly, the percentage of subjects who said that they had close friends

in their institution increased from 60 to 70. The proportion of inmates specifying that they lived mostly on their own went down from 43% to 38%. Thus, the amount of social interaction showed a clear increase, along with the observed small increase in the total amount of time spent in socialization. Such changes were expectable, given that most subjects had remained in the same institutions since the first interview, and given their previous pattern of dependence on social activities.

On the items which measure cognitions about the use of time there was little change, although some questions were changed to provide more detailed information. As before, most (86%) said that they had a general plan for their time. Of these, 34% specified that the plan was to "keep busy", 17 tried to "stay out of trouble", and 18% wanted to achieve something. Thus, the "plans" were mostly strategies for dealing with the general problem of imprisonment.

Despite the apparent regularity of activity patterns, most also admitted little real planning of their time. As before, most said that they lived day by day. On a further inquiry, 62% said that they did not even plan their time within days, but rather "let things happen". Most of our subjects seemed to drift through their time, and in this they had changed little from the outside.

However, there were some considerable changes in the amount of contact with individuals on the outside. The number of letters and visits both showed statistically significant increases (for letters, $t = 8.56$, $p < .001$; for visits, $t = 3.45$, $p < .001$). Subjects were corresponding with an average of 4.8 people on the outside. Evidently it took some time for mail to be forwarded, for lists of visitors to be approved, etc., but this occurred within a few months.

Still, there were still some who had little or no contact with people outside. Eight percent had no letters at all, and 46% had no visits. Thus, a significant minority of inmates was cut off from outside contacts.

Interestingly, as the amount of actual contact increased, so did the desired amounts, in almost the same proportions: the desired number of letters tripled, and the desired number of visits doubled. As a result, the absolute disparities between desires and actuality increased.

The overall picture one can gather from the above figures is one of

inmates having established more or less stable ways of enduring their time. Many had worked to re-establish social networks similar to those they had on the outside. At the same time there was also evidence of a descent for many inmates to the aimlessness of their outside lives. This is seen in the descriptions of their "plans" for their time above, and in the infrequency of any real planning. It can also be seen in the question about whether they had a goal to accomplish during their terms, where the percentage of affirmative answers decreased significantly ($t=3.16$, $p<.01$).

It is easy to see how this can happen. The shock, disruption and novelty at the beginning of a prison term turn into the familiarity and boredom of consistent routine. Without the establishment of new patterns of behavior, there will be a behavioral vacuum for old habits to fill. Thus, the impetus for change visible at the beginning of the term crumbles under the niggling pressure of routine and habit.

This does not harm inmates visibly, for indeed their emotional wellbeing had improved from that at the first interview. The average score on the Spielberger State Anxiety Inventory had dropped significantly ($t=3.83$, $p<.001$) as did those for the Beck Depression Inventory ($t=4.96$, $p<.001$) and Hopelessness ($t=5.59$, $p<.001$). All of these indicate the amelioration of the emotional disturbances consequent on the beginning of the term. Only the reported frequency of anger increased ($t=2.39$, $p<.05$) and this is understandable, since anger is evoked situationally. Although the general improvement is fortunate, it is disheartening that the initial shock was not used to institute new patterns of thought and behavior.

Problems and Coping at the Second Interview

As at the previous interview, each subject provided us with an ordered list of problems he faced. The original list was not considered in the construction of the new list, so that the previous statement of problems would not affect the new list. However, when the second list had been completed the two were compared.

In general, the problems listed at this time were very much like those at the first interview. As before, the problems were classified; the list of the most common problems with their frequencies is shown in Table 3.11. Missing family and friends remained the most common problem by a

Table 3.11

Frequent Problems in Prison
(Interview 2)

Category	Frequency	Percentage
1. Missing family or friends	108	83
2. Missing freedom	64	49
3. Lack of desired programs or facilities	9	7
4. Regrets or troubling thoughts about past	33	25
5. Boredom	29	22
6. Conflicts with other inmates	34	26
7. Concern re future, esp., life after release	57	44
8. Cell conditions (lack privacy, noise, etc.)	20	15
9. Lack of staff support or help	22	17
10. Problems in medical services	22	17
11. Miss specific object or activity	55	42
12. Concern about personal safety	9	7

substantial margin. Concerns for the future were noticeably more frequent, but otherwise there was not much change in any of the categories. Thus, the sorts of problems which inmates experienced were relatively stable over the first few months of their terms.

We also compared the two lists in individual cases to assess the degree of stability. At the interview the lists were compared, and the subject was asked to tell the reasons for any deletions from the previous list. If it was ambiguous whether items on the two lists were equivalent, the subject was asked to clarify whether they were different statements of the same problem, or whether they should be considered as separate problems.

From this information we calculated that about 44% of all problems specified at the second interview had been previously listed. Interestingly, this varied systematically and monotonically with the position on the list, i.e., the more important a problem, the more likely it was to have been on the previous list. Thus, 59% of the highest ranked problems had been previously listed, but only 23% of the problems ranked fifth.

Reasons for most of the changes were easily classified. In 31% of all cases the subject said that the problem still existed, but that it was now not important enough to list. In about half of the cases the problem no longer existed: in 29% the situation had changed, and for 20% the situation was unchanged but the inmate's reaction had altered to the extent that it was no longer a problem. In only 2% did the subject say that an omitted item had simply been forgotten.

Thus, there was good consistency in the common problems of inmates and persistence of the problems that individual inmates faced. Despite the changes brought by the passage of time, one's most troubling problems remain. Finding ways of successfully coping with them is therefore of great importance.

To turn then to the assessment of coping at the second interview, the various indices showed little change from their original levels. For example, the mean level on the Efficacy scale was 12.0, trivially higher than at the first interview; the other measures showed similar effects.

If inmates were learning to cope with imprisonment from experience, we

would expect increases in coping ability. The lack of any such sizeable changes might indicate that such learning did not take place, although the interval between the two assessments was in this case rather short. A better judgment will be possible when we consider the data from the final interview.

Lifestyle and Behavior: Third Interview

The final interview and testing was carried out approximately one year after the second. Although the population of subjects was the same for the first two interviews, by the time of the third interview some selection had occurred, and many of the short- and medium-term inmates had been released. Overall means from this interview must therefore be interpreted cautiously. Wherever possible, comparisons with previous interviews will be made by comparing scores for the subjects who remained, using t-tests. This avoids bias which might derive from comparing the results of different populations, but it limits slightly the generality of the results.

Despite the problem of attrition, the pattern of results seen in the third interview is very similar to those described before. Where changes occurred, they were in most cases in continuation of changes seen from the first interview to the second, as may be seen in Tables 3.8 and 3.9.

To begin with, the breakdown of time spent in various categories was very similar to that in the previous interview, with a single exception. The increase in passive activity seen from the first to the second interview was maintained. However, there was a drop in the time spent socializing from that seen in each of the previous interviews. The differences with each of the previous interviews were statistically significant (for the comparison with the first interview, $t=2.15$, and with the second, $t=2.13$; for each, $p<.05$).

This change was mirrored in almost all of our other indicators of social interactions. The percentage of inmates who said that they had close friends in their institution dropped from the level in the second interview, to what it was originally. The mean number of friends showed a substantial and significant decrease from the second interview ($=2.92$, $p<.01$). If one is not socializing, the time must be filled with more solitary sorts of activity; thus, the measure of time spent in the cell

rose by about one-quarter to 38% of the available time ($t=2.45$, $p<.05$). Moreover, the proportion of subjects who specified that they choose to spend their time mostly on their own increased from 36% at the second interview to 57% at the third.

Apparently, socializing had reached its peak some time in the first year and then declined; those inmates who remained after about a year and a half had begun to spend more time on their own. At the same time it appears that inmates were not avoiding social activities, but rather they had found other ways of spending their time to be more rewarding. For example, 60% of those who chose to remain in their cell when they had the choice to also go out onto the range, specified that this was in order to do an activity which could only be done in their cell.

At the same time, changes in social interactions with other inmates were not accompanied by decreases in contact with the outside. Mean values for measures of outside contact showed no sizeable or significant changes from levels at the second interview. Only the mean for the number of visits shows a drop. However, this is clearly the result of selection rather than changes across time, since the inmates remaining at the third interview contained a disproportionate number who received no visits at any time (48%).

In areas other than socialization, the pattern of life was generally much like that discussed above. If anything, subjects seemed even more than before to be drifting through the daily tides of time. Although almost all said that they had a plan for how to do their time, for 35% the plan was just to keep busy, and for another 34% it was to relax or stay out of trouble; only 15% had a general plan of trying to achieve something during their term. Only 19% planned their time overall, even less than previously, and of the others 72% said that they "just let things happen" rather than even planning their time within a day.

By the third interview, the impetus toward self improvement and change seen originally had almost disappeared. For example, the 60% of subjects who saw self improvement as the primary benefit of their jobs at the first interview had fallen to 45% by the second, and dropped even more to 30% by the third. In terms of Irwin's categories, the number of inmates who identified themselves within the description of "gleaners" fell from 52% at

the first interview to 31% at the third. Other indices showed similar trends.

Thus, after some time in prison our subjects had become the slaves of daily routine. This does not mean that they did not think of the future, for the total frequency of thoughts of the future was higher than at the second interview. However, for the first time we differentiated between thoughts of the future within prison and thoughts of the future outside, and almost three-quarters of the total was in the latter category. Since release was then far in the future for most subjects, thinking of the future was mostly a means of coping akin to daydreaming or fantasizing. Indeed, when we asked subjects about their plans for the future, most seemed to consist of fanciful objectives without any concrete plans, e.g., "I will get married, get a good job, settle down, and never come back here - but I'll figure out the details once I get out there." Thus, they did not plan specifically for any moment other than the one immediately at hand. Most were drifting through their time, carried in the concrete reality of the present.

Such a pattern of living does have some advantages, for it diminishes emotional disturbances from thoughts outside the present. Depression, anxiety and guilt had all continued to decrease after the second interview; the decrease was significant for the Spielberger Anxiety Scale ($t=2.14$, $p<.05$) and for the frequency of guilt feelings ($t=2.29$, $p<.05$), but not for the Beck Depression scale. There were also significant improvements from the first interview on Self-Esteem ($t=5.06$, $p<.001$) and Self-Depreciation ($t=6.49$, $p<.001$) which had not been measured at the second interview. Among dysphoric emotional states, anger remained unchanged, as would be expected since it was most commonly evoked by everyday events within prison. And of course loneliness and boredom were also as high as before, since they are evoked by the unalterable absence of certain people or things.

The decreases in chronic emotional distress were not accompanied by increased satisfaction with conditions in prison. The mean rating of the quality of life, or the proportion of inmates who saw positive benefits in their imprisonment, remained unchanged across interviews. If anything, subjects evaluated their lives more negatively, and the total number of problems mentioned was higher than at the first interview ($t=2.94$, $p<.01$).

Clearly, subjects did not feel that things had improved in their environments, but rather they had adopted ways of mitigating the stress they experienced. The focus on the concrete present was likely central in the pattern.

In some cases this way of dealing with events is almost demanded by the uncertainties of life in prison. For example, the majority of subjects who were appealing their cases in the courts still had no decisions by the time of the third interview. Clearly, it is difficult to plan for the future when its location is undecided. Similarly, 50% of subjects had moved to a new institution between the second and third interviews; it is difficult to immerse oneself in a training program when one may have to leave it at any time. In general, the system at present does not give inmates clear and accurate information which will allow them to plan their futures, at least not until the time when their release is imminent. By that time their patterns of behavior have been set, and it is too late.

However, even though the prison system does little to change the observed patterns of behavior, and in some ways promotes it, it is clear that most inmates needed little encouragement to adopt such a lifestyle. The lack of direction and planning were visible in their lives outside of prison, and one would expect the same patterns to be equally common on the inside.

Given the predispositions from both personal history and institutional conditions, it is easy to see how inmates would narrow their attention spans to the immediate moment. Yet, this has its costs. If inmates anesthetise themselves against the pains of imprisonment - or of life - by narrowing their vision, they are truly taking a short-sighted approach. In helping to deal with the present they are cutting themselves off from most of the possibilities of future improvement. Clearly, there are better ways of coping which can be taught to inmates.

Problems and Coping: Final Interview

The frequencies of common problems seen in the lists generated at the third interview are contained in Table 3.12. There was little change in the ordering from the previous occasions.

Comparing the items on the new lists to those from the second interview, we calculated that approximately 40% of the problems listed at the third interview had been on previous lists. Once again, there was a relationship between the rank of a problem on the list and the probability that it had been listed before: 48% of the items ranked first were repeated, as contrasted with 22% of the problems ranked fifth. Thus, there is some stability in the things which inmates appraise as potentially stressful, even across the passage of a year, and the more a situation is a problem the more it is likely to remain a problem.

If the choice of situations which had to be coped with was relatively constant, so was the quality of coping. The mean Efficacy score was 12.2, very slightly higher than at the second interview. While the changes across interviews were small, they were consistent, and as a result mean Efficacy was significantly higher at the last interview than at the first ($t=2.34$, $p<.05$). Thus, there was a small improvement in coping ability across the time surveyed.

There were also some small differences in the use of various coping modes, mostly in continuation of trends seen at the second interview. From Table 3.7 it may be seen that there was a greater use of simple palliative behaviors. While such responses are ineffective in providing long-term solutions to difficulties, they are helpful in dealing with problems which admit to no ready solution. In addition, there seems to have been a trend toward the use of cognitive strategies, particularly reinterpretation of situations, especially when compared with the frequency of use outside of prison. Other than these, the use of most categories was relatively stable across our assessments, with the understandable exception of drug-taking.

There also seems to have been some increase in the total number of coping categories used. From a mean of 3.6 on the outside the values rose monotonically across interviews to 4.2 at the final assessment. While the differences across interviews were not significant, the cumulative difference from the outside to the last interview did show statistical

Table 3.12

Frequent Problems in Prison
(Interview 3)

Category	Frequency	Percentage
1. Missing family or friends	74	77
2. Missing freedom	39	41
3. Lack of desired programs or facilities	13	14
4. Regrets or troubling thoughts about past	17	18
5. Boredom	14	15
6. Conflicts with other inmates	22	23
7. Concern re future, esp., life after release	40	42
8. Cell conditions (lack privacy, noise, etc.)	30	31
9. Lack of staff support or help	11	12
10. Problems in medical services	22	23
11. Miss specific object or activity	44	46
12. Concern about personal safety	9	9

reliability ($t=2.59$, $p<.05$). However, there were no changes in the Coping Modes Index, or in the Variety scores; for both, the levels at the third interview were about the same as the scores for inside prison at the first interview.

From all of these results, we conclude that many aspects of inmates' behavior had changed considerably from the beginning of the term by the time of the third interview. At the beginning of a prison term there is considerable disturbance of established behaviors, accompanied by some emotional distress. However, as the days become months the emotional effects are mitigated, and behavior settles down in the unbreakable grip of invariable routine.

Many of our subjects tended to re-establish in prison some of the behavior patterns they had used on the outside. Still, their chronic problems remained chronic, and while they could cope day by day, it was mostly by reinforcing the routines and narrowing their attention to focus only on the present moment. In order to manage the present, they avoided the future except as a source of fantasies, and kept the past only for the comfort of some of its happier memories.

Perhaps this is why in time many began to adopt more solitary lifestyles. Those with long terms told us how they often avoided relationships with other inmates, because the others were bound to be released or transferred, leaving them all the more open to loneliness. Thus, their social contacts became limited and often superficial, to avoid the entanglements, obligations and conflicts which often result from socialization in the prison (Cohen & Taylor, 1972). Some became hardened, sealing off their capacities to reach outside the present moment of the self.

If this description goes beyond the limits of our quantified data, it was clear enough clinically: the pattern was often visible in the faces and demeanor of the men we interviewed, and the changes from the first to the last interviews were often quite marked. In some respects the time span of this study was insufficient to chart all of the changes, and a further interview at some time in the future would be desirable. However, at the last interviews we saw the emergence of some effects which may be characteristic of long-term imprisonment. The coldness of men who have

long been cut off from the outside was evident in the dropoff of socialization as well as in their localization in the transient moment of the present. Psychological survival was the result and they managed to cope, but the cost is considerable.

The consequences of the changes seen over time are likely to be most serious when an inmate is released to face the outside world again. Many of the maladaptive behaviors described earlier for the typical inmate are carried to an extreme in the long-term behavior pattern. A person who has learned to live in the centre of a psychological moat will not easily cope well with the demands of everyday life. Thus, the changes which result from long-term imprisonment may well be counter-productive in terms of rehabilitation. On the bottom line, this of course means that long sentences may not serve well the aim of reducing crime.

Comparisons on Major Variables

In the above sections, our subjects were treated as a single group in order to derive a set of descriptive generalizations. However, it should be obvious that such a procedure ignores many real differences that may exist in the data: we interviewed individuals, not a composite sum. While summaries are useful in showing commonalities in the data, they also ignore other factors, especially the differences across subgroups of subjects or the effects of particular variables. In contrast, this section will present the results of a set of explicit comparisons for subgroup classifications on several important variables.

We were particularly interested in the effects of different sentence lengths, and changes over time in the summary statistics had suggested that these might figure prominently in the data, so comparisons using this variable are the first to be reported here. Differences between inmates according to the amount of previous imprisonment also seemed important to examine, and these will therefore be considered second. Finally, differences across institutions are of theoretical and practical interest, so they will be evaluated.

Length of Sentence

One might expect that the length of the current term would be an important factor in determining how inmates adapt to imprisonment. Therefore, we grouped subjects according to sentence length and looked for differences between subgroups. In order to minimize the number of comparisons, and therefore increase their statistical power, the subjects were divided into only two groups.

Inmates in our original long-term group (sentences of 10 years or over) differed from the others in that they could not realistically look forward to release within the time scale of this study, at least not by any ordinary and legal means. The earliest release on parole for any subject in this group would have been possible only several months after the last interview, and for most the earliest possible date was at least several years in the future. In contrast, subjects in the short-term and

medium-term groups could all have been considered for release by about the time the final interview was scheduled, and of course many were actually released before that time. This difference in the possibility of release seems a critical one, as it ought to affect many aspects of planning, lifestyle and the cognitive appraisal of events. As well, it was also clear that many long-term inmates, especially those with life terms, are treated quite differently from others by the penitentiary system; we shall discuss some of the differences below.

Therefore, we combined subjects in the two shorter-term groups, and compared them to those with long terms. Thus, the division was according to whether a subject's sentence was less than 10 years or not, although in fact about two-thirds of the long-term group had life sentences, with minimum terms from 7 to 25 years.

Comparisons were made on all of the variables in our principal list. Given the break according to the possibilities of release described above, the length of sentence variable probably violates assumptions of parametric tests. Also, some of the variables against which it was tested were only nominally scaled. Therefore, the Chi-square statistic was used as the basic test of significant differences. Scores on each variable were recoded in most cases into 2 or 3 sets, with the dividing points chosen to equalize the numbers in each set. Contingency tables were then formed, subdividing the scores within each variable according to the two groups of sentence lengths, and Chi-square statistics were computed for each table. Thus, we tested whether there were statistically reliable differences between long-term inmates and the others on a wide variety of measures.

In the discussion below, only measures which showed statistically significant differences will be considered. Given the number of variables tested, the results show relatively few significant differences. However, some of those which did appear are quite interesting.

Among background measures, there were only two which showed significant differences. Forty-nine percent of the long-term subjects were first- or only-born children, as against 29% of the others ($p < .05$). Also, the average occupational level of the fathers of our long-term inmates seems to have been lower ($p < .01$) with more at the bottom levels of occupational categories. These differences are enigmatic and their proper

interpretations are unclear to us. It should also be noted that the FPS records for long-term offenders showed generally fewer convictions, although the difference was just short of statistical significance ($p < .06$).

However, there are some differences which show orderly patterns and allow consistent interpretation. The first set of these shows how long-term inmates are treated differently within the penitentiary system. For example, they are held at higher levels of custody, both initially and later in their terms. At the first interview, 85% of the long-term group were being held under maximum security conditions, as opposed to only 6% of the others ($p < .001$). Sixteen months later the figures were similar: 74% of long-term inmates in maximum security, compared to only 16% of the others ($p < .001$).

This of course means that long-term inmates were concentrated in only a few institutions. Most of them were in Millhaven Institution, viz., 71% at the first interview, and 56% at the third. For those not in MI, the largest set were held in protective custody at Kingston Penitentiary, 15% at the first interview and 18% at the last. In fact, longterm subjects were more likely to be in P.C. than other inmates ($p < .05$).

The concentration of long-term inmates in certain institutions is not surprising since it is the result of assignment policies currently in effect. Whether correctly or not, long-term inmates are seen as greater risks by those responsible for institutional assignments and transfers. As a result, they are faced with much greater limitations of choice and opportunity than other inmates, e.g., only a restricted range of occupational training is available to them.

Not only were long-term inmates originally assigned to a restricted range of higher security institutions, but it is also the case that the these individuals were less likely to change institutions during the course of the study ($p < .01$). While the majority of shorter-term subjects moved at least once, only 20% of the long-term subjects were reassigned. Thus, the long-term inmate had little chance of quick improvement in his circumstances, regardless of his behavior. Again, this appears to be the result of a deliberate policy, and many subjects informed us that they were told that long-term inmates must prove themselves able to maintain good records for several years in maximum security before they would be

recommended for transfers.

Our results allow evaluation of the necessity for such a policy. They generally indicated that, if anything, subjects in our long-term group adapted better to imprisonment. Certainly, they had shown superior coping outside of prison, where the Coping Modes Index showed higher scores and more high-level strategies for long-term subjects ($p < .01$). This was likely a reflection of the difference in previous criminal records mentioned above. As well, there was evidence that long-term subjects were superior in coping inside prison: they were higher on the measure of Efficacy combined across interviews ($p < .05$); they were also better on the Variety rating for the second interview ($p < .01$). Although these represent only a few significant results, they do show that the long-term inmates were certainly not worse in coping than other inmates.

Given the prospect of a long term in prison, often of uncertain duration, and given their assignment to the deprivations of maximum security conditions with no prospects of quick improvement, one might expect much greater stress levels among long-term inmates. At the first interview, there was some evidence of this. Forty-eight percent of the long-term inmates reported sleeping less at the first interview than outside, as opposed to 24% of the others ($p < .05$); in consequence, the time spent in sleep was lower than for other subjects ($p < .05$). Long-term subjects were also more likely to increased their frequency of daydreaming ($p < .05$).

Some measures at the first interview showed weak evidence for differences in emotional problems. Long-term subjects had higher scores on the Hopelessness scale ($p < .01$) and lower scores on Self-esteem ($p < .05$). They were also less sanguine than others about the future, expecting to be more depressed ($p < .01$) and have less feelings of wellbeing ($p < .05$) a year in the future.

From these results we conclude that long-term inmates were originally showing more stress than other inmates, but overall the effects were relatively minor. We had expected that this might be the case, since the effects of long sentences could take some time to develop. We were repeatedly told by long-term inmates at the first interview that they had not yet begun to adjust to their sentences.

One reason for this was the possibility of overturning sentences through appeals. The likelihood of pursuing an appeal was of course higher for individuals with long sentences ($p < .001$). However, the long-term inmates also thought about their appeals more often than the others ($p < .001$), and they had higher expectations of the success of their appeals ($p < .001$).

As a result, many of our subjects seemed to be in a psychological limbo at the first interview. As one said, "I have two terms to serve: the first is from now until my appeal is over, and the second is the rest of the 25 years if I lose my case." The long-term subjects as a group reported thinking about the future less frequently ($p < .05$). At the same time, they also dwelt on thoughts of the past more than did other inmates ($p < .01$).

Thus, the differences according to sentence length in behavioral or emotional measures at the first interview were not profound. Many of the differences which did occur were clearly attributable to real differences in circumstances. Still one might have expected that the deleterious effects of long sentences would appear later, and that the follow-up interviews would reveal the full effects.

However, this does not appear to have happened. In contrast to the expectations above, at the subsequent interviews the weak evidence of greater emotional problems among long-term inmates disappeared, and the few differences between groups were weak, inconsistent and sometimes rather trivial. For example, long-term subjects reported more feelings of guilt at the second interview ($p < .05$) but this might be interpreted as reasonable considering the greater gravity of their offenses. Similarly, the mean frequency of loneliness reported at the last interview was higher for long-term subjects ($p < .05$) but this was entirely the result of a smaller proportion of those who said that they never felt lonely in prison; considering the realities, an absence of feelings of loneliness is inappropriate, so the obtained difference might be said to favor the long-term group. Finally, there was a difference on one questionnaire measure of anxiety at the second interview, but this was produced by differences in the distributions for the two groups, and there was no difference in the mean levels.

Other than these, there were no significant differences in behavioral or emotional measures after the first interview, with the only exceptions that long-term inmates reported receiving more letters ($p < .05$) and spent more time in passive activities ($p < .01$), both at the final interview. In addition, there was no visible effect of sentence length on outcome measures or other measures of adaptation.

From these data we conclude that inmates with long sentences do not adapt any worse than others in the Canadian penitentiary system. This does not mean that they are absolutely without problems psychologically, for certainly our data show evidence of problems for all of the subjects in this study, but only that they are not worse than others in the system.

The only evidence we found for greater problems among long-sentence inmates was weak and restricted to the beginning of the sentence. Such effects can be explained as the result of the greater original shock of a long sentence. Indeed, the discrepancy between the actual sentence and that expected before the trial was much greater for long-term inmates than for those with shorter sentences ($p < .001$). Thus, we have little if any evidence to support a claim of greater problems among long-term inmates.

This conclusion must be tempered by the caution that the time frame of this study may have been too short to measure any differences which would develop later. Even by the time of the third interview, the majority of appeals had not been adjudicated, and our data show that long-term subjects still had higher expectations of successful appeals than other subjects ($p < .05$). When appeal procedures are exhausted and the sentence remains, as must inevitably happen for most, it is possible that inmates will be thrown out of the "psychological limbo" described above.

While only a further study can tell definitively, we do not think that such changes are very likely. The time of our final interview was well past the point of settling into institutional routines. Habits and patterns of coping with events are likely to be stable once they are established, especially within a particular environment. The strategies for living described in previous sections would not easily be easily changed after a few years. Although some individuals may develop problems over time, there are unlikely to be any appreciable changes in behavior which develop later to differentiate those inmates with long terms from

others.

From this, we would not say that long-term imprisonment does not produce deleterious effects, for some of the results in the previous section have shown changes over time which occur for all inmates. We argued there that these changes are generally deleterious, especially in their implications for the possibility of successful adaptation to life outside of prison after release. However, they occurred after some time in prison, and were not different for inmates with the longest sentences. Thus, the operative variable is time served, rather than sentence length. Of course, inmates with long sentences will eventually serve long times, and will be changed as a result, but the lack of differences related to sentence length alone shows that they need not be treated differently than other inmates during the early parts of their terms.

While the conclusions here may alleviate concerns about possible special damage to individuals who are facing especially long sentences, at the same time they indicate a need for serious changes in the treatment of long-term offenders. Our data show that long-term inmates do not present more problems than others, either in psychological adjustment or in measures of behavior within their institutions, e.g., disciplinary infractions. Therefore, there is no justification for the current policy of placing virtually every long-term inmate in maximum security conditions, with little possibility of improvement for several years, regardless of their behavior. Despite the seriousness of the offenses for which they were imprisoned, inmates with long sentences do not present greater problems within the penitentiary than other inmates. Therefore, their treatment in prison should depend on their behavior there, and not on some arbitrary rule which discriminates against them.

Previous Imprisonment

The second major variable on which we tested for differences was the total amount of time previously served in prison. For the basic measure, we combined inmates' reports of previous reformatory and penitentiary time. (These reports almost invariably yielded higher totals than file records in the minority of cases where the two differed, so they likely contained information missing from the files; therefore, they were chosen as

preferable.)

The measure of prison experience has a real division in it, since there is a great difference between a value of 0 and any other score, so again nonparametric statistics were used. For formation of contingency tables, previous prison experience was divided into three groups with approximately equal numbers of subjects in each: no experience, some experience (from 1 to 24 months) and much experience (over 24 months). Of course, experience in the current term was not counted. The distribution of subjects in these three groups was then tested across most of the variables in the basic list.

There were significant differences in more cases than for the previous analyses, with sizeable differences on measures in almost every category. First, there were differences on a number of background variables.

Given the links between imprisonment and subsequent criminality, it is not surprising that there were relationships between previous imprisonment and indices of criminal affiliation. For example, the percentage of subjects' acquaintances who were engaged in criminal activities rose systematically with prison experience ($p < .01$), and the probability of having a visible tattoo was also related ($p < .001$). Interestingly, there was also a link with social class origins, viz., the higher the class of origin, the less the previous imprisonment ($p < .01$). Although we might expect a weak link of this type to be visible in the general population, its appearance as a strong relationship within a penitentiary sample is intriguing.

There were also significant differences on a number of variables which measure criminal history, e.g., the number of previous convictions ($p < .001$) or the age at the first criminal offense ($p < .001$). These associations are of course tautological, and will not be reported or discussed further.

However, other background measures show differences which may be more meaningful. Those with no previous prison experience were likely to have had more years of school ($p < .05$) and also more or better job training than the others ($p < .05$). This could show only that some inmates had spent their time in prison, rather than in school or training programs. Such an explanation ignores the fact that education or training acquired in prison are also counted in these measures. In addition, there was a relationship

between prison experience and the probability of having been employed before being arrested ($p < .05$). All of these results imply possible differences in coping outside of prison.

Other results indicate more directly that adjustment on the outside varied with prison experience. Among them is marital status, which shows that 51% of those with no previous imprisonment were married, as compared to 37% of those with some experience and 21% of the group with experience over 24 months ($p < .01$). Similarly, three-quarters of the group with no previous imprisonment had been living in the same residential arrangement for longer than 5 years, as opposed to less than a third of the others ($p < .001$). The majority of first-term inmates lived in a nuclear family (wife and children) on the outside as opposed to less than a third of the others ($p < .05$). Thus, there was evidence of some important differences in social adjustment and stability.

Even more revealing are differences on each of the indices of drug and alcohol abuse. Only a minority of the no-experience group showed heavy drinking at least once a week, but the figures rise to 87% for the group with the most previous experience ($p < .001$). There were also systematic differences in the measure of the Number of Drugs Index ($p < .05$) and the Drug Frequency Index ($p < .01$).

These differences indicate more than just differences in background, or identification with criminal subcultures, which might have been expected. Rather, they show a relationship between previous imprisonment and coping on the outside. Such an inference is in fact confirmed by a direct test of coping Efficacy scores for life outside of prison ($p < .01$). Fifty-six percent of the no-experience group had scores in the top third of the distribution, but only 35% of those with some previous experience and 19% of the last group. The closely related Variety measure also showed significant differences ($p < .05$).

Thus, there were significant differences in lifestyle which relate to the amount of previous imprisonment. Even more, there were differences in coping. One might generalize by saying that those who had not previously been in prison are hard to differentiate from the general population on the outside; in contrast, individuals who have served time seem to have poorer adjustment than most people, and on most measures the problems increase

with the amount of previous imprisonment.

Still, these results may be explained as the result of differences in experience on the outside. The more time a person spends in prison, the less he spends on the outside, and the fewer opportunities he will have to learn to cope well with the tragedies and tribulations of daily life on the outside.

This explanation assumes that coping skills come with experience. It would therefore predict that experience in prison should lead to better coping in that setting. In fact, our measures of coping in prison also showed an inverse relation with previous prison experience. The Efficacy measure combined across interviews included 60% of the no-experience group in the top third of the distribution, compared to 45% of the some-experience group and 28% of high-experience subjects. Even at the last interview, over a year into the term, the differences in Efficacy were still visible, although they fell just short of significance ($p < .06$). Thus, it appears that those with the least experience in prison coped most effectively. If this is paradoxical, it indicates that the behaviors involved in what we consider to be good coping are not acquired in prison.

One of the basic premises of this study is that the quality of coping determines successful adaptation to an environment. Thus, we would expect that differences in coping related to previous experience would be followed by differences in outcome measures. Several behavioral measures in fact showed such differences.

Most important among these is our Discipline Index which showed that the more an inmate was previously in prison, the more of a discipline problem he presented ($p < .05$). Similarly, 21% of the most experienced group were moved to an institution with a higher level of custody during the study, compared to only 3% of the first-term inmates ($p < .01$); such moves are almost always because of behavior problems. There were even differences on the Prison Life Events scale, which gives an estimate of the number of adverse events which had happened to an inmate: scores for those with no previous experience were lower ($p < .05$). Clearly, previous experience does not predict either a quieter existence in prison or an increased ability to avoid problems, but rather the converse.

There were also effects on measures of medical problems, including the

number of somatic (non-accidental) complaints ($p < .05$) and the total number of initiations ($p < .05$). Prison experience was also systematically related to the existence of a sleep problem at the final interview ($p < .05$).

Interestingly, most of our emotional measures of adaptation did not show significant differences, although they were in the predicted directions. The only significant difference was in the frequency of anger feelings reported at the second interview, which correlated positively with prison experience ($p < .001$). It would appear that the aspects of coping which differ across prison experience are those which affect behavior more than chronic emotional distress.

Finally, the amount of previous experience also related to some measures of inmates' appraisals of the degree of hardship they experienced. Those with no previous experience were more likely to see positive things in their imprisonment ($p < .05$). They were also much more likely at the final interview to judge that the rest of their term would be relatively easier than the time already expired ($p < .01$). Familiarity does not ease the pains of imprisonment, but rather adds to them.

It should be noted that many of the differences reported here could have been obtained artifactually if a large proportion of the first-term inmates had been assigned to institutions with lower levels of custody, which might provide an easier life (but see the following section). Fortunately for the results of the study, there was no relationship between experience and levels of custody, with 30-35% of subjects in each level of custody from each of our experience groups.

Thus, the amount of time previously spent in prison relates significantly to coping and adaptation, both outside and inside prison. These effects are open to interpretation, but they probably do not provide reasonable evidence for a claim that prisons produce poor copers. The subjects with previous imprisonment are not fairly representative of those released from prisons, but rather they are a particular selected subset, viz., recidivists. It may well be that among released inmates the better copers adapt successfully but the poorer copers again commit criminal offenses. And it would also follow that the worse the coping responses, the more likely would be further offenses after any given period of imprisonment.

If this is so, then it is further evidence that the quality of coping is an important factor in the conditions leading to criminal acts. Therefore, these data have important implications for policies regarding the treatment of offenders. Any serious attempt to prevent recidivism must include programs to improve coping. Otherwise, those who arrive in prison because they are poor copers will leave as poor copers, and they will therefore be likely to return.

Differences Between Institutions

The final set of comparisons to be reported here was aimed at showing differences across the various institutions.

We have assumed that the actual environment is (within normal limits) a relatively weak determinant of adaptational outcomes. However, the presence of a large number of sizeable institutional differences would show that this is incorrect, and that the actual environment must be given a larger role in our theory. On the other hand, minimal differences would confirm that individual processes of appraisal and coping are more important than environment, i.e., that the perceptions of problems are generally more important than the details of the situations themselves.

Analyses of differences by institutions can also be useful in another way. At present, inmates are assigned to institutions by parole officers. Although the assignments are supposedly in conformity with a set of guidelines, we observed some variation in the assignments of inmates with apparently similar offenses. Therefore, it is useful to analyze initial assignments in terms of their relationships to a variety of background factors, to see which are the important determinants. This has some empirical interest, and it might also be quite useful later when we analyze the factors which relate to actual adaptation and behavior in the penitentiaries.

Accordingly, we carried out a set of comparisons across different types of institutions. Previous analyses of this kind (Porporino, 1983) had shown no significant differences when individual institutions were considered, but a large number of categories may weaken the power of statistical tests to discriminate among alternatives. Therefore, in the

present case we combined institutions by the level of custody into four groups: maximum (Millhaven); medium (Collins Bay, Joyceville, Warkworth); minimum (Bath, Pittsburgh, Frontenac, Beaver Creek); and protective custody (Kingston).

Two sets of analyses were calculated. The first set compared all of the background factors included in our list of principal measures with the institution to which inmates were originally assigned. These analyses were intended to show the factors which most influenced the original assignment. In contrast, the second set of analyses was designed to show differences in behavior and adaptation across institutions. Thus, they compared all of the measures of coping, appraisal and adaptation at the last interview across the institutions in which inmates lived at that time. As before, the Chi-square statistic was used because the variable of primary interest had only categorical values.

Results of the first set of analyses showed that most of our background measures were not significantly related to the institution of original assignment. Certainly the entire criminal record was not taken into account when making the assignments, for if anything there was a tendency for those in maximum security to have fewer total convictions: for example, 14% of those in maximum security had 20 or more convictions on their FPS record, compared to 39% of those in medium security. Also, as stated previously, there was no relationship between security classification and the amount of previous imprisonment.

Only three variables did relate significantly to the original assignment. First was the classification of birth order, with a greater proportion of first- or only-born children assigned to maximum security and protective custody than to the other categories ($p < .01$).

More revealing were the other variables which related significantly to the assignment, viz., the length of sentence and the category of the current offense. Both of these were highly significant ($p < .001$), in the expected directions. That is, longer sentences were strongly related to assignment to maximum security, as were offenses involving violence, especially murder.

Thus, it appears that the offense and sentence were used a great deal in determining initial assignment, and other factors, including criminal

history and evidence of previous behavior or adjustment problems, were largely ignored. In the previous sections it was shown that the length of sentence has little relationship to inmates' behavior or adaptation in prison, but that the amount of previous imprisonment is more strongly related. The implications for assignment policies will not be belabored here. Later, we will provide further analyses of factors which predict behavior in prison.

From our second set of analyses we may decide to what extent different types of institutions control the adaptation of inmates. Here again only a few significant relationships were visible. Among the coping variables, both general and specific, the only significant difference was for the Variety scale. On this variable, 78% of the protective custody inmates had high scores, compared to 15% of minimum security subjects, 17% in maximum security and 26% of those in medium security ($p < .05$). Given that the differences are not linearly related to security levels, this result is not very meaningful.

There were also no significant differences among our outcome measures, either behavioral or emotional, although inmates in MI showed some evidence of greater depression ($p < .10$). However, several appraisal measures showed differences which varied according to security level. These include the total number of problems mentioned, the listing of positive features of the institution, rating of life in prison, and the Hopelessness scale ($p < .05$ for each). In all four cases, appraisals varied inversely with the level of security, i.e., they were less favorable at higher levels of custody.

Thus, inmates did perceive differences in the quality of life in different institutions. At the same time, such perceptions were not accompanied by differences in behavior or adaptation. Considering the very large differences across institutions in the degree of restriction and confinement, the absence of adaptational or behavioral differences is impressive. The few significant differences which were seen only indicate that the failure of differences for other measures was not because of the insensitivity of the statistical tests used here. Rather, these results largely confirm our theoretical expectations. Although features of the environment will affect primary appraisals, they do not generally have a large effect on secondary appraisals or the coping process. Therefore, the

choice of institution has little influence on the quality of inmates' adaptation.

Correlations with Coping Efficacy

Previous sections have established that the quality of coping can be reliably measured, and that the measures vary with some important factors, e.g., outside prison versus inside, or the amount of previous imprisonment. This section will consider the correlations between coping Efficacy and other variables. First, we will look at the set of background and historical factors which relate to coping Efficacy outside of prison. Next, we will survey the correlations between Efficacy inside prison and all other measures. Finally, we will present a regression model which allows us to predict coping at the final interview from measures taken previously.

On preliminary examination of the results, it appeared that there might be some differences in the patterns of correlations for Long-term subjects and those for the others. While it has been shown that sentence length is not a powerful variable in determining overall means on most measures, it is still possible that the factors which relate to coping are different for inmates of different sentence lengths. In addition, the practical questions of whether Long-term inmates show any special characteristics led to a decision to evaluate the differences as fully as possible.

Therefore, the analyses which follow were calculated separately for two groups of inmates. The Long-term group was considered separately, while the short-term and medium-term groups were combined. In addition to the practical reasons stated above for dividing subjects on this basis, the distinction coincided with the likely differences in expectations of possible release within the time frame of the study (detailed in an earlier section).

Unlike the variables in the previous three sets of analyses, for which the assumptions of parametric statistical tests were unjustified, the Efficacy scores were continuously and normally distributed. Therefore, the analyses in this section use Pearson correlation coefficients. Some of the variables for which correlations were calculated do not have continuous distributions, especially those which are binomial, but the result is to restrict the size of obtained correlations. Since these violations of

assumptions are conservative in effect, it seemed reasonable to allow them, in order to include as wide a range of measures as possible.

Coping on the Outside

One question raised by some of the previous analyses is that of specifying the determinants of coping outside of prison. To answer this, we calculated the correlations between outside Efficacy and all of the background and historical variables included in our basic list. Measures of some historical aspects of coping e.g., drug use, marital status, etc., were also included, to extend the amount of information obtainable.

The results are shown in Table 3.13 for both the Short-Medium and the Long-term groups. In general, more background factors are correlated with Efficacy for the former group, although the sizes of the correlations do not seem to differ much. Also, it is clear that the strongest correlations for the Long-term group are those with measures of drug and alcohol use, while the corresponding correlations for the S-M group are much weaker.

For both groups, measures of previous criminality and imprisonment are well represented in the table. However, general socioeconomic factors are not highly related to coping. This is consistent with the position that the occurrence of criminal behavior is the result of poor coping ability, while deprivation variables act only indirectly by affecting coping ability, and are therefore rather weak in their effects on criminal behaviors. Of course, this sort of correlational evidence does not constitute very firm evidence. Still, it should be added to other evidence in this study on the same question.

Coping Inside Prison

If the above analyses provide some information on the historical correlates of coping Efficacy, they tell little about how it relates to contemporary or future behavior. Therefore, we included the second set of analyses. In this case, we combined measures of Efficacy across the three interviews to give a single summary estimate of coping ability. Correlations were calculated with all interval scaled variables from the basic list (with the exceptions of the other general coping scales).

A good many of the correlations yielded significant results, as may be

Table 3.13

Correlations with Coping
Outside of Prison

Variable	S-M	Long
Background		
Social Class		.31*
Number of Siblings	-.28**	
Presence of Tattoos	-.30**	-.40**
Juvenile Record	-.33*	
Age at 1st FPS Entry	.31**	.44**
Number of Convictions	-.38***	-.35*
Proportion of Life in Prison	-.27**	-.31*
Coping History		
Number of Drugs Index		-.52***
Frequency of Drugs Index		-.58***
Alcohol Abuse Index	-.25*	-.49***
Marital Status	.46***	
Time in Current Residence	.28**	

* $p < .05$ ** $p < .01$ *** $p < .001$

seen in Table 3.14. The sizes ranged from basically trivial values of under .20, up to very respectable values around or over .50.

In general, measures of background and adjustment previous to imprisonment were more frequently significantly correlated for the Short-Medium group than for the Long-term group. Coping in prison was much determined by the past for most inmates, but for Long-termers the links seemed weaker. Perhaps this is because the anticipation and experience of a long term are so different from anything else in the experience of most people, even those in a penitentiary population.

Specific coping-related behaviors and activity patterns show a number of significant correlations for both groups, mostly depicting the lifestyle described in previous sections. The better copers tended to socialize less, and either worked more or stayed in their cells more; they also were more likely to plan their time in the present, but they avoided dwelling on the past; and they kept in touch with the outside world. Although there are some differences in the specific variables which are correlated with coping for the two groups, there do not seem to be any differences in kind: either alternate measures of similar behaviors are correlated, or the same measure taken at different times.

Among appraisal measures, those which are correlated for both groups include the Hopelessness and Locus of Control scales. Good copers were more hopeful about the future and they also felt more in control of their environment. There are also a number of correlations with specific expectations, showing that good copers saw better chances of early release and lower probabilities of returning to prison after release. According to our (theoretical) expectations, their expectations were probably correct. Interestingly, good copers also missed people from the outside more than did poor copers.

Finally, it can be seen that coping Efficacy correlates with many of the variables which measure behavioral and emotional adaptation or maladaptation. These include disciplinary history, medical usage, and a variety of measures of emotional states, for both groups. Clearly, coping in prison does relate to what happens to inmates and how they adjust.

Table 3.14

Correlations with Coping
Inside Prison

Variable	S-M	Long
Background		
Social Class	.27**	
Number of Siblings	-.30**	-.31*
School Level Completed		.35*
Juvenile Record	-.38*	
Number of Convictions	-.33***	-.29*
Previous Prison Time	-.34***	
Percent Criminal Acquaintances	-.22*	
Coping Process		
Time in Current Residence	.25*	
Marital Status	.26**	
Suicide Index	-.20*	
Drug Frequency Index	-.27**	
Alcohol Abuse Index	-.40***	-.30*
Prop of Time Spent Working I2	.25**	
Prop of Time Spent Socializing I1	-.20*	
" " " " " I2		-.31*
Prop of Time in Group Meetings I3	.29*	
Prop of Time in Sports/Hobbies I2	.25*	
Pct Optional Cell Time I1		.57***
Number of Friends I2		-.35*
Number of Letters I2	.18*	
Number of Visits I3		.33*
Frequency Receive News I3	.30*	
Have General Plan I2	.31**	
" " " " I3	.28*	
Plan or Live Day by Day I1	-.28*	-.28*
" " " " " I2	-.23*	-.28*
" " " " " I3	-.21*	-.31*
Frequency Think of Future I2	-.28**	
Frequency Think of Past I1		-.43**
" " " " I2	-.21*	

(continued on next page)

Table 3.14 (cont.)

Variable	S-M	Long
Appraisals		
Self-Depreciation I1		-.26*
Hopelessness I1	-.33**	-.30*
" I2	-.39***	-.37**
" I3	-.24*	-.40**
Prison Locus of Control I2	.38***	.30*
" " " " I3	.42***	.47***
Locus of Control Total Internal I1		.37**
" " " Powerful Others I1		.57***
" " " Total Internal I3	.28*	
" " " Powerful Others I3		.46**
" " " Chance I3		.42**
Attitudes to Criminal Justice I1	.19*	.44*
" " " " I3		.48**
Appraised Nbr Positive Things I2	.29**	
" " " " I3	.44***	
Rate Life I2	.21*	
Estimate Chance Parole Release I1	.38***	.52*
" " " " I3	.39***	.45*
Est. No Release Until MS Date I1	-.25*	
" " " " " I3	-.37**	
Est Chance Parole/MS Revocation	-.30*	-.43**
Est Chance Return for New Sentence	-.35**	-.33*
Job Rating I1	.35**	
Frequency Miss People I2	.22*	.33*
" " " I3	.31**	
Total Problems Mentioned I3	-.48**	
Outcomes		
Institutional Moves Index	.25**	
Discipline Index	-.38**	-.32*
Number of Somatic Complaints	-.22*	
Medical Stress Index	-.24*	
Frequency Bored	-.20*	-.31*
Beck Depression Inventory I1	-.20*	-.41**
" " " I2	-.24*	
" " " I3		-.29*
Spielberger State Anxiety Inv I1		-.31*
" " " I3		-.30*
Frequency of Anger I1	-.22*	-.34*
" " " I2	-.22*	-.36*
" " " I3		-.33*
Frequency of Anxiety I2	-.22*	
" " " I3		-.32*

* p<.05

** p<.01

*** p<.001

Prediction of Coping Efficacy

The correlations discussed above show that Efficacy relates to all classes of variables, from family background to emotional state at our last interview. As such, these findings support our theoretical position that coping Efficacy represents an individual's success in dealing with problems in the present, and therefore mediates between his history and the success of his adaptation in the future.

However, it would also be of use to show how well Efficacy can be predicted by other factors. We can do this from the previous table to some extent, but it is difficult to pick the most important determinants from the list of correlations, and many variables on the list are likely redundant with each other.

In order to provide an optimal list of predictors of coping Efficacy, we carried out regression analyses. To make the analyses truly predictive, we used the measure of Efficacy at the last interview as the dependent measure. The set of possible predictors included all variables from the first two interviews which showed significant simple correlations with the target measure, with only outcome variables excluded. The stepwise method of the analyses allowed all variables equal opportunity to enter into the regression equation (see the section on Outcomes for fuller description of regression methods.) As before, separate analyses were done for the two groups.

Table 3.15 shows the results for the Long-term group, and Table 3.16 for the Short-Medium. As can be seen, most of the variance in the final level of coping for the Long-term subjects is accounted for in the regression equation, but only half as much is included for Short-Medium. Even though the simple correlations above showed more entries for the Short-Medium group, coping Efficacy was much better predicted for the Long-term subjects.

In the Long-term group, background factors in the equation indicate that poor coping in prison was related to a previous history of problem behaviors and difficulties in school. Inside prison, superior coping could be predicted for inmates who socialized alone or in small groups, and who spent relatively high amounts of time in their cells; those who would be

TABLE 3.15

Summary of Regression Analysis
for Coping Efficacy at Interview 3
(predictive - I2 and I2 variables)
Group: Long

Overall statistics

Multiple R	.899
R squared	.808
Adjusted R squared	.744

Variables in the equation

Description	Beta Weight
Background	
Age at first behavior problems	-.21*
Number of school years completed	.18*
Coping process	
Percent optional cell time	.31**
Difference in frequency of thoughts of future, I1 inside prison from outside	-.29**
Goal to accomplish I2	-.27**
Pattern of socialization I1	-.21*
Frequency of daydreams I2	.19*
Appraisal-cognitive	
Appraisal: how often staff helpful, I2	.15
Hopelessness I1	-.21*
Specific problem: lack of programs I2	.27**

TABLE 3.16

Summary of Regression Analysis
for Coping Efficacy at Interview 3
(predictive - I2 and I2 variables)
Group: Short-Medium

Overall statistics

Multiple R	.656
R squared	.430
Adjusted R squared	.375

Variables in the equation

Description	Beta Weight
Background	
Father's occupation	-.24**
Number of criminal friends	-.15
Coping process	
Pattern of socialization I1	-.22*
Plan life or day-by-day (Outside)	.16
Appraisal-cognitive	
Appraisal: how often staff helpful, I2	.26**
Frequency of missing people I2	.20*
Specific problem: worry re safety I2	.22*
Checklist I2: predicted anxiety 1 yr future	-.22*

good copers also reduced the frequency of their thoughts of the future from the outside, but they tended to have educational goals in prison; they also daydreamed more than did other inmates. Those who were high on Hopelessness were poor copers later, while those who were concerned about a lack of suitable training programs were actually the better copers later.

In the Short-Medium group, background factors in the equation show that a poor social history and previous criminal contacts predicted poor coping in prison. While in prison, good copers tended again to be those who socialized mostly on their own and who had planned their lives previously. Those who missed people from the outside, worried about their personal safety in prison, and got good cooperation from prison staff would be the better copers a year later.

There are some similarities in these two patterns. Both show the influence of early background factors in determining coping in prison, although these factors do not account for much of the total variance. Within prison, individuals who avoided the typical pattern of drifting day by day without goals were later the better copers. The good copers also seemed to stay away from the inmate subculture, for they did not socialize as much and their relations with staff members were good.

Overall, the analyses in this section show that coping Efficacy is affected by one's personal history, and that it in turn affects the quality of later adaptation. Coping in prison inmates is also contemporaneously related to a number of independently-measured behaviors. In general, the pattern which emerges shows that the better copers in the penitentiary population behave somewhat differently than other inmates. They socialize differently, they plan differently, and they tend to think about different things.

Thus, good coping can be defined either by direct measure or in terms of a set of specific behaviors. If one knows the specific responses, the overall level of Efficacy can be predicted, and we would expect that prediction from the general to the specific would also be possible. In the next section, we will consider in more detail how coping behavior and other factors can also predict adaptation.

Prediction of Outcome Measures

Outcome Criteria

One of the major objectives of this study was to determine how well coping and appraisal measures could predict subsequent behavior and adaptation in prison. This section considers some evidence on the question.

For the analyses reported here, we chose a set of five outcome measures, each a criterion of a particular aspect of adaptation.

The first measure was the Discipline Index, which represented the history of disciplinary infractions during the course of the study. It was formed by first finding the number of days of lost privileges, the number of days of punitive dissociation imposed, and the number of days of lost remission. In cases where an inmate had been out absent from the penitentiary system for periods of longer than two weeks, the totals were corrected to estimate amounts for the full period. Values for each of the three disciplinary punishments were normalized, and the normal deviates were added together to form the composite index. Thus, the DI is a measure of disciplinary punishments imposed.

The second outcome measure was chosen to reflect medical problems experienced during the term, specifically those related to or resulting from stress. It was clear that a measure of all medical treatment would include many problems which had begun previous to the current term, and also some which ought not to be affected by stress very much, e.g., accidental injuries. Therefore, we chose as our Medical Index the number of days on stress-related medications. From the list of all medical complaints we selected those which were stress-related. (See Appendix E for a more complete description of the process.) We then calculated the total number of days on which a subject had taken any medication prescribed for a stress-related problem. As with the DI, the MI was corrected for periods of extended absence from the penitentiary system.

The final three outcome criteria were measures of emotional state. Depression and anxiety are the most common results of the inability to handle stressful events. As a measure of depression, we chose the Beck Depression Index, since it has been widely used and validated for clinical

interpretation. This scale had been administered at each interview, but we used only the score from the last occasion, since our primary interest was in the prediction of final levels. We used the Spielberger State Anxiety Index from the final testing as the criterion measure of anxiety, again because of its previous validation and wide use.

We also wanted to measure anger because it is another likely result of coping problems, and also because our expectations were that it is a problem especially among inmates. Unfortunately, there was no good measure of anger which had been previously validated and generally accepted. Therefore, we used the simplest measure available, viz., the subject's estimate at the final interview of his average frequency of feelings of anger. We shall refer to this as the Anger Index. (See Appendix E for a description of the coding for the Anger Index).

Description of Analyses

Several analyses were carried out. First, correlations were computed between all of the background, coping process and cognitive appraisal measures, and each of the five outcome criteria. For the reasons described in the previous section, subjects were divided into two groups, viz., Long and Short-Medium (S-M). The entire set of correlations was computed separately for each group.

Subsequently, a series of multiple regression analyses was computed for each criterion, using in each case the set of predictor measures which showed significant correlations with the respective criterion in the first analysis. Three different types of regression analyses are included here.

The first regression includes all variables which correlated significantly with a given criterion. A stepwise regression procedure was used, where all of the available predictors are examined at each step for both entry or removal (Hull and Nie, 1981). The criteria for entry and removal were set rather liberally, with a probability of F less than .10 for entry and greater than .15 for removal. The only restriction was that the background variables were allowed to enter first, followed by the coping process variables and then the set of appraisal variables. The first part of this ordering was determined by the desire to allow background factors every benefit in assessing predictive value. The choice

to allow coping variables to precede appraisals was taken on the basis of our theoretical expectations that coping behavior mediates between background and cognitions.

The results of this procedure are what may be regarded as an optimal subset of predictors for each criterion. The set of simple correlations is highly redundant, since it includes many instances where a set of highly related measures are each correlated with the criterion. In the stepwise regression the redundancy is much reduced, and thus this analysis was intended to reduce the large sets of simple correlations to a more manageable number.

However, a more important objective of this study was to predict outcome criteria. Therefore, other regressions were computed in which measures from the third interview and testing were deleted, i.e., only measures from the first two interviews and testings could be included in the predictor set. Since the outcome measures were taken at the final interview, or assessed from files afterwards, these analyses measured how well we could predict from measures taken a year or more previously.

There were two sets of predictive regressions. First, a set of analyses was conducted using again the stepwise procedure. These differed from the first analyses only as stated above, so that the results are interpretable as predictions of the outcome criteria. As before, the stepwise procedure is useful in finding the optimal set of predictors for a particular criterion.

The final set of analyses used a hierarchical entry procedure. In this regression method, the measures within each set of predictors are all entered concurrently. This differs from the stepwise procedure in that all of the listed variables must enter into the regression equation, and variables cannot be removed. Although this allows a certain amount of redundancy, it is useful in comparing the predictive usefulness of the different types of predictor variables. As before, the background measures were entered first, followed by the coping process measures and finally by the cognitive-appraisal variables.

All of the regression analyses were conducted using the "New Regression" subprogram in Release 9 of the Statistical Package for the Social Sciences (Hull and Nie, 1981). For each analysis, adjusted R^2

values are reported in addition to the sample R^2 values. These adjusted values estimate the variance which the same set of variables would likely account for in a new sample, and thus constitute a prediction of the generalizability of the regression equations.

Results of Simple Correlation Analyses

The Pearson correlations between the sets of predictor variables and each of the criterion measures are presented in Tables 3.17 and 3.18, for the two sentence length groups respectively.

Given the sheer number of variables, it is impossible to discuss individual correlations in these sets. However, a few generalizations are supported by an examination of the tables.

First, it is clear that the DI correlated with a wide variety of predictor variables in all categories. While few of these correlations are very large, a great many were significant, far more than the number for any of the other criterion variables. This is particularly so for the S-M group, although it is also visible for the Long-term group. Apparently, disciplinary offenses are tied to a great many aspects of life in prison.

None of the other criteria had so many significant correlates, although each showed a variety of associated factors in almost every category. The Long-term group had more correlates than S-M for the three measures of emotional state, but the differences are not great. The MI had the fewest significant correlates for both groups.

Thus, the pattern seen in the tables is one of a multitude of scattered correlations, most of them small to moderate in size. Some of the criteria seem better predicted than others, and there are differences between groups, but each set of correlations contains a variety of variables.

Similarly, when one looks at particular subsets of variables a few generalizations can be made. For example, the background factors were strongly tied to the DI for the S-M group, but not so heavily implicated in any of the other sets of correlations.

However, given the number of variables involved, consideration of the individual values would require a very long discussion indeed, and such an amount of detailed information would probably serve to confuse rather than

Table 3.17

Correlations with Outcome Criteria
Group: Long

Variable	DI	MI	ANGER	STAI	BDI
Background					
Social class				-.37*	-.50***
Family type ages 6-11	.40**				
Number of siblings				.35*	
Job training		-.29*			
Age 1st FPS entry			-.31*		
Total convictions	.35*		.36*		
Number criminal friends					.31*
Tattoos	.28*				
Sentence length			-.31*		
Level custody I2	.27				.31*
" " I3	.52***				.32*
Coping					
Efficacy outside		-.28*	-.33*		-.32*
" I1		-.33*		-.34*	-.30*
" I2	-.37**	-.27*		-.31*	
" I3	-.33*		-.41**		
" I1-I3	-.38**	-.29*		-.30*	-.29*
Modes Index outside	-.36*				
" " I1		-.49***		-.29*	-.34*
" " I2	-.36*				
Variety outside		-.30*			
" I1				-.29*	
" I2	-.28*			-.35*	
Control thoughts I1				.35*	
" " I3			-.55***		
Plan or day-by-day I2	.28*				
Freq think future I1					-.40**
Freq think future inside I3		-.34*		-.30*	
Freq think past I1		.37**	-.28*		
" " I3	-.34*				-.35*
Social. pattern I1			.46**	-.27*	
" " I2	.27*				
" " I3				-.37*	
Number friends I1			.35*		
" " I2				-.45**	-.34*
" " I3					-.27*

Table 3.17 (cont.)

Variable	DI	MI	ANGER	STAI	BDI
Coping (cont.)					
Number visits I2	-.28*				
Freq receive news I2	-.28*				
" " " I3	-.40**				
Time sleep I3			-.34*		
Time visits/letters I1			-.30*		
" " " I2				-.33*	
" " " I3	-.39**				-.38**
Time socializing I2	.37**				
" " " I3	.36*				
Time group mtgs I2	-.28*				
Pct optnl cell time I1					-.38**
" " " I3	-.33*				
Suicide index	.30*	.38**		.35*	
Number drugs index				-.29*	
Drug Freq index	.29*		.32*		
Alcohol abuse index	.56***				.40**
Time last residence					-.30*
Appraisal					
Self depreciation I1			-.28*		
" " " I3		.34*		.41**	.59***
Self esteem I3	-.30*	-.37*		-.39**	-.63***
Hopelessness I3				.35*	.55***
Prison locus control I2				-.28*	-.32*
" " " I3			-.29*	-.45**	-.43**
Locus cntrl intl I1				-.41**	
" " extl I1				-.34*	-.46***
" " others I1				-.39**	-.33*
" " chance I1					-.43**
" " intl I3	-.27*			-.35*	-.45**
" " extl I3				-.48***	-.63***
" " others I3	-.27*			-.50***	-.54***
" " chance I3				-.35*	-.57***
Chance appeal success I3				.41*	
Freq think appeal I1				-.52***	
" " " I3	.46*				
Remaining time long? I3				.29*	.49**
Chance no rls to MSD I3					.34*
Ltrs discrepancy I1	.56***	.49***			
Visits discrepancy I1				-.28*	
Job rating outside	-.45**				-.49**
" " I2	-.43**				-.35*
" " I3	-.34*				

Table 3.17 (cont.)

Variable	DI	MI	ANGER	STAI	BDI
Appraisals (cont.)					
Freq miss people I1	-.30*				
" " " I2			-.35*		
" " " I3			-.46**		
Positive things here I1				-.37*	
" " " I2	-.30*				
Rating of life I2					-.27*
" " " I3					-.34*
Rmng time easier? I3	-.38*				
Total problems I1	.36**		.31*	.35*	.39**
" " I2	.60*	.67*			
Problem re future I1					.37*
" cell I1		.35*			
" medical I1				-.42**	
" safety I1			-.27*	.44**	.32*
" other I1		.33*			
" past I2				.24*	
" safety I2				.42**	
" miss people I3			-.30*		
" program I3			-.33*		
" past I3					.36*
" cell I3			-.30*		
" staff I3		.40**			
" safety I3	.27*			.36*	.43**
" other I3				-.31*	-.31*
Prison probs scale I2	.33*			.35*	.35*
" " " I3	.44**	.33*		.48***	.60***
Actvty deprvn index	.32*				
Life events scale		.31*			
Prison life events	.40**				

* p<.05

** p<.01

*** p<.001

Table 3.18

Correlations with Outcome Criteria
Group: Short-Medium

	DI	MI	ANGER	STAI	BDI
Background					
Father's occupation	.26*				
Social class	-.27**	-.24*			
Family type ages 6-11	.26**				
Age	-.34***		-.26*		
School yrs completed				-.26*	-.24*
Marital status			-.27*		
Juvenile record	.34*				
Age 1st FPS entry	-.20*		-.28*		
Total convictions	.19*				
Prop life in prison	.35**				
Number crimnl friends	.22*				
Pct crmnl acquaints	.19*				
Sentence length	.36***	.15*		.23*	
Custody level I1	.19*				
" " I3	-.18*				
Coping					
Efficacy outside	-.24*			-.30*	-.24*
" I1		-.19*			.30*
" I2	-.28**				
" I3	-.38**				
" I1-I3	-.32***	-.24*			
Variety I1					.28*
" I3	-.34**		-.25*		
Control thoughts I1	-.26*	-.22*			
" " I2	-.20*	-.19*			
" " I3	-.27*		-.33**		
Freq daydream I1	.19*			.28*	
" " I3	.30*				
General plan I3	.22*				
Plan or daybyday I1	.23*				
" " " I2	.18*				
" " " I3	.35**				
Freq think future I1		-.24*			
" " " I2		.20*		-.46***	-.23*
Freq thnk fut insd I3				-.33**	
Freq think past I1				.29*	
" " " I2			.27*	-.39**	-.32**

Table 3.18 (cont.)

	DI	MI	ANGER	STAI	BDI
Coping (cont.)					
Pattern socializ I1	.18*				
" " I2					-.25*
" " I3	.39***				
Nbr friends I2				-.23*	
" " I3	.32**				
Nbr letters I1		.20*			
" " I2		-.19*	-.30*		
Nbr visits I1	-.25**				
" " I2	-.22*				
Freq receive news I1				.31*	.35**
Time visits/ltrs I2	-.39***	-.25**		-.39**	-.27*
" " I3			.32**		
" socializing I2	.26**				
" " I3	.51***				
" passive acty I1				.33**	
Pct optnl cell I1			-.23*		
" " " I2			-.32**		
" " " I3	-.36**			.28*	
Suicide index		.32***			
Nbr drugs index	.38***				
Drug freq index	.46***	.26*			
Alcohol abuse index	.36***	.28**			
Time prev residence	-.26*				.28*
Longest female rltn	-.24*				
Longest job held			-.23*		
Appraisals					
Social dsrlblty I3				-.37**	
Self depreciation I3		.25*		.43***	.66***
Self esteem I3				-.59***	-.71***
Hopelessness I1	.25**				
" I2	.30**				.27*
" I3			.26*	.27*	.52***
Prsn Loc control I2	-.21*	-.24*		-.28*	
" " " I3	-.36**			-.46***	-.33**
Loc contrl intrnl I1			.25*		
" " extrnl I1					-.28*
" " chance I1	-.19*			-.25*	-.40***
" " extrnl I3				-.26*	-.51***
" " others I3				-.26*	-.38**
" " chance I3					-.55***

Table 3.18 (cont.)

	DI	MI	ANGER	STAI	BDI
Chance appeal succ I1	.18*			.29*	
Freq thnk appeal I1	.19*				
Rmng time long? I1			-.28*		
" " " I3				.29*	
Chnc no rls unt MSD I1			.31*		
" " " " " I3	.39**		.24*		
Job rating outside		-.36**			
Postv things I2				-.35**	-.42***
" " I3	-.30*			-.34**	
Rtg of life I1				-.30*	
" " " I2				-.29*	
Chnc new sentnc I3			.31*		
Freq miss ppl I2			-.28*	.24*	
Total probs I2				.50**	.56***
" " I3	.29*			.34*	
Prob: miss ppl I1			-.22*		
" miss frdm I1	-.20*		-.23*		
" med srvcs I1		.28**			
" miss thngs I1	.19*				
" miss frdm I2	-.23*				
" boredom I2		.29**		.34**	
" future I2	.19*				.23*
" staff I2	-.21*				
" miss thngs I2			.24*		
" other I2		.21*			
" frdm I3				.36**	
" lack prgm I3				-.23*	-.27*
" boredom I3				.32**	.25*
" future I3	.38**			.29*	
" staff I3			-.23*		
" med srvcs		.23*			
" other I3			.26*		
Prsn prob Scale I2	.32**			.65***	.59***
" " " I3	.31*			.69***	.61***
Acty depvn index				.29*	
Life events				.40**	.37**
Prsn life events	.38**	.26*		.27*	.40**

* $p < .05$
 ** $p < .01$
 *** $p < .001$

enlighten. Therefore, the reduction of information provided by the regression analyses is particularly useful. These analyses are presented in the following sections.

Concomitant Regression Analyses

This section will be concerned with the first regression analyses discussed above, i.e., those generated by entering the entire sets of significantly correlated predictor variables for each of the outcome criteria. The results will be presented serially for the five criteria.

Discipline Index. The list of the variables which entered into the regression equation are shown with their final Beta weightings in Table 3.19 for the Long-term group, and in Table 3.20 for the S-M group. The tables also show basic statistics for the overall equation.

In each case it can be seen that the adjusted R^2 values were very substantial, being .80 for the Long-term group and .65 for S-M. These values are surprisingly high, given that they indicate the proportion of criterion variance accounted for. Although they were derived from a large original set of variables, the number of variables in the final equations is only 12 for the Long-term group and 17 for S-M. Thus, inclusion of all the factors in this study allows us to postdictively account for most of the variance in disciplinary infractions.

Inspection of the lists shows some interesting differences and also some commonalities. Since many measures were taken repeatedly over the three interviews, they are listed as different variables; however, on the assumption that such repeated measures are closely related, they will be treated as essentially the same for the discussion below.

Comparison of the two lists shows a higher number of background factors involved for the S-M group. These variables include several which are measures of involvement with criminal subcultures, indicating that S-M inmates with strong criminal backgrounds were greater disciplinary problems than other inmates. For the Long-term group, the only included variable relating to criminal history is the total number of convictions.

For both groups, the level of custody is included in the equation, showing as expected that inmates at higher levels of custody had more

TABLE 3.19

Summary of Regression Analysis
for Disciplinary Index
(concomitant - all variables)
Group: Long

Overall statistics

Multiple R	.929
R squared	.864
Adjusted R squared	.805

Variables in the equation

Description	Beta Weight
Background	
Family type at ages 6-11	.34***
Total number of convictions (FPS)	.28**
Level of custody, I2	.11
Coping process	
Proportion of total time spent socializing, I3	.30**
Coping Modes Index, outside of prison	-.31***
Suicide Index	.06
Socialization Pattern, I2	.15
Frequency receive news reports, I3	-.20*
Appraisal-cognitive	
Discrepancy between letters desired/received	.29**
Total problems mentioned, I2	.24**
Prison Problems Scale, I3	.27*
Prison Problems Scale, I2	-.17

TABLE 3.20

Summary of Regression Analysis
for Disciplinary Index
(concomitant - all variables)
Group: Short-Medium

Overall statistics

Multiple R	.845
R squared	.715
Adjusted R squared	.649

Variables in the equation

Description	Beta Weight
Background	
Presence of tattoos	.13
Age at I1	-.17
Level of custody, I1	.18**
Family type at ages 6-11	.29***
Father's occupation	.20**
Number of criminal friends	.08
Age at first FPS entry	.14
Presence of juvenile record	.01
Coping process	
Proportion of total time spent socializing, I3	.32***
Drug Frequency Index	.20*
Frequency of daydreams, I3	.11
Coping Efficacy, I1-I3 combined	-.11
Socialization pattern, I3	.16*
Number of visits, I2	-.13
Plan days or live day-by-day, I1	.08
Appraisal-cognitive	
Prison Problems Scale, I3	.21**
Total problems mentioned, I3	.20**

discipline problems. Both groups also show the influence of family type, indicating that subjects from more stable families had less disciplinary trouble.

A variety of variables in the coping category are also listed for each group. In each case, the pattern associated with extensive disciplinary problems is similar to that described before for poor copers. High DI values for Long-term subjects were associated with factors indicating a low level of coping on the outside, and a strong immersion in socialization with other inmates on the inside. Subjects in the S-M group showed a similar pattern, with additional variables emphasizing their day-by-day lifestyle within the penitentiary.

Finally, both groups had very similar relationships between appraisal variables and discipline. In each case, secondary appraisal variables did not enter into the equation at all, but primary appraisals were important. In particular, inmates who felt that they had a lot of problems were more likely to have disciplinary infractions.

In summary, we may say that inmates who had a history of poor coping and a lifestyle of high social involvement within the penitentiary were the ones who presented the most disciplinary problems, particularly if they felt stressed by problems within the institution. There was also an influence from previous criminal history, especially in the case of S-M subjects.

Medical Stress Index. On the measure of stress-related medications, there was a divergence between the two groups. As may be seen in Tables 3.21 and 3.22, the regression equation was able to account for about 72% of the variance (adjusted R) for the Long-term group, but only half of that for the S-M group. Evidently we are overlooking some significant factors which influenced the medical symptoms of stress for the latter group, although we can account fairly well for the variance in long-term subjects.

This conclusion seems especially justified when we look at the variables which are included in each of the regresssion equations. Comparison shows lists which are generally quite similar. In each case there are a total of 9 items, including one from the background set and four from each of the other sets. Even the subsets of coping variables

TABLE 3.21

Summary of Regression Analysis
for Medical Stress Index
(concomitant - all variables)
Group: Long

Overall statistics

Multiple R	.884
R squared	.781
Adjusted R squared	.718

Variables in the equation

Description	Beta Weight
Background	
Level of job training	-.20*
Coping process	
Coping Modes Index, I1	-.31**
Suicide Index	.21*
Frequency of thoughts of the past, I1	.29**
Frequency of thoughts of the future, I3	-.10
Appraisal-cognitive	
Total problems mentioned, I2	.31**
Discrepancy between letters desired/received, I1	.30**
Specific problem: cell conditions, I1	.30**
Prison Problems Scale, I2	-.21

TABLE 3.22

Summary of Regression Analysis
for Medical Stress Index
(concomitant - all variables)
Group: Short-Medium

Overall statistics

Multiple R	.651
R squared	.424
Adjusted R squared	.361

Variables in the equation

Description	Beta Weight
Background	
Social class	-.02
Coping process	
Suicide Index	.30***
Frequency of thoughts of the future, I1	-.24**
Number of letters received	.17
Alcohol Abuse Index	.04
Appraisal-cognitive	
Specific problem: medical services, I1	.31***
Specific problem: medical services, I3	.21*
Specific problem: boredom, I2	.23*
Specific problem: uncategorized, I2	.23*

which are included seem almost the same. They indicate that inmates with high values on the MI were likely to be those who had a history of poor coping, possibly including suicide attempts, and who may have avoided thoughts of the future but dwelt on the past.

The only visible differences between the two sets are in the items from the set of appraisal variables. In the Long-term group these indicate that subjects who experienced more problems were more likely to show the effects of stress. For the S-M group this link is not apparent, and the list contains only a set of particular problems, including difficulties with medical services, trivial under the circumstances.

Given the overall similarity of the factors in the two regression equations, it is therefore somewhat surprising that they differ so much in the amounts of variance which they can account for. It seems unlikely that such a large difference would be owing to the lack of a relationship from the overall level of problems in the S-M group. Rather, it seems more likely that some significant additional factor not included in this study has a major effect on MI scores for the S-M subjects.

Depression. The regressions for the BDI show very good proportions of the overall variance accounted for in both groups. In the S-M group, about 70% of the variance is included in the final equation, and for the Long-term group it reaches close to 85%. Tables 3.23 and 3.24 summarize these results.

Both sets show some differences from the two previous measures. First, it can be seen that background factors enter only minimally into the regressions for depression. At the same time, these equations show an increased role of appraisal variables, which comprise half of the total entries in the S-M equation and the majority for the Long-term group.

Examination of the particular variables in the equations shows some interesting results. The relatively depressed long-term inmate had a history of poor coping outside of prison, with little help from social contacts within the prison or hopeful thoughts of the future. His depressed feelings were accompanied by feelings that he ought to be able to help himself, but there were also fears about the future; perhaps as a result, he had a poor self image. In the S-M group, the depressed

TABLE 3.23

Summary of Regression Analysis
for Depression Inventory
(concomitant - all variables)
Group: Long

Overall statistics

Multiple R	.945
R squared	.894
Adjusted R squared	.848

Variables in the equation

Description	Beta Weight
Background	
Social class	.07
Coping process	
Frequency think of future, I1	-.25***
Percent optional cell time	-.00
Length of time in living arrangements outside	-.19**
Number of friends in prison, I1	.05
Appraisal-cognitive	
Locus of Control Scale, total External, I3	-.25
Specific problem: concern re future, I1	.25**
Self-Depreciation Scale	.33***
Rating of prison job, I2	-.34***
Prison Problems Scale	.17*
Locus of control Scale, Chance, I3	-.31*
Prison Locus of Control Scale, I2	.15

TABLE 3.24

Summary of Regression Analysis
for Depression Inventory
(concomitant - all variables)
Group: Short-Medium

Overall statistics

Multiple R	.854
R squared	.730
Adjusted R squared	.696

Variables in the equation

Description	Beta Weight
Background none	
Coping process	
Frequency receive news, I1	.22**
Socialization pattern, I2	-.15*
Coping Variety, I1	.14*
Frequency think of past, I2	-.03
Coping Efficacy, Outside	.02
Appraisal-cognitive	
Self-Esteem Scale, I3	-.36***
Prison Life Events Scale	.17*
Prison Problems Scale, I2	.19**
Self-Depreciation Scale, I3	.19*
Locus of Control Scale, Chance, I3	-.13

individual kept in touch with the world outside of prison, but he had few social contacts within; again, he felt that his problems were heavy, and he saw himself as responsible for the situation, with low feelings of self worth.

By themselves these descriptions are interesting in their congruence with what one would expect from clinical experience. However, the most important feature is not in the selection of elements, but the direction of the effects for some variables. For example, individuals who were relatively asocial in prison had lower rates of disciplinary infractions, yet they were more prone to depression. Other variables, such as the frequency of thoughts about the past, or the frequency of receiving news reports from the outside, also show effects which differ in direction for different criteria. This indicates that particular behaviors may not be universally effective in minimizing stress, for a behavior pattern that helps one to cope in one way may be injurious from another standpoint. The implications of this for our conceptualizations of coping are profound.

Anxiety. The results for the second measure of emotional state are in many ways like those for depression. The two regression equations, summarized in Tables 3.25 and 3.26, each account for slightly over 80% of the total variance on the STAI. Again, the largest number of variables in the equations are measures of cognitions and appraisals; also, the Beta weights for the appraisal variables tend to be fairly high, indicating their importance in the equations.

For subjects in the S-M group, highly anxious individuals spent much of their time by themselves; they experienced a heavy load of problems, including boredom and missing their freedom; they avoided thoughts of the future, for its prospects were unpleasant; they had high social needs, but they tended to stay by themselves, perhaps because they felt inadequate.

For the long-term inmates, a consistent picture using the variables in the regression equation is harder to visualize. The more anxious individuals in this group were likely to be of lower-class origins. They tended to avoid thoughts about their future in prison, which they saw (correctly) as a long time, although thinking about their appeals could sometimes reduce their anxiety. They also saw many problems in their

TABLE 3.25

Summary of Regression Analysis
for Anxiety Inventory
(concomitant - all variables)
Group: Long

Overall statistics

Multiple R	.935
R squared	.875
Adjusted R squared	.827

Variables in the equation

Description	Beta Weight
Background	
Number of siblings	-.02
Social class	-.19*
Coping process	
Socialization pattern	.03
Frequency of thoughts of prison future, I3	-.43***
Drug Frequency Index	-.05
Appraisal-cognitive	
Locus of Control Scale, Powerful Others, I3	-.43***
Frequency think of appeal, I1	-.29**
Appraisal of chance of appeal success, I3	.49***
Prison Problems Scale, I2	.21**
Specific problem: uncategorized, I3	-.26**
Appraisal: is remaining time long? I3	.17*

TABLE 3.26

Summary of Regression Analysis
for Anxiety Inventory
(concomitant - all variables)
Group: Short-Medium

Overall statistics

Multiple R	.919
R squared	.844
Adjusted R squared	.814

Variables in the equation

Description	Beta Weight
Background	
Number of school years completed	-.06
Coping process	
Frequency of thoughts of future, I2	-.07
Percent optional cell time, I3	.23***
Frequency of thoughts of past, I2	-.06
Coping Efficacy, Outside	-.08
Frequency of thoughts of prison future, I3	-.11*
Appraisal-cognitive	
Prison Problems Scale, I3	.28***
Social Desirability Scale, I3	-.23***
Prison Locus of Control Scale, I3	-.28***
Specific problem: concern re future, I3	.27***
Specific problem: miss freedom, I3	.25***
Specific problem: boredom, I3	.14*
Self-Esteem Scale, I3	-.17*
Appraisal of positive things in prison, I3	.12*
Rating of Life	-.08

environment. As well, there was an anomalous negative relationship between anxiety and the amount of previous drug-taking.

In any case, the results of the STAI were highly associated with other variables in this study. In several cases, we again see that behaviors which appeared as adaptive on a behavioral measure may be maladaptive on an emotional criterion of adaptation.

Anger. On the last criterion measure there is again a disparity between the two groups, with the Long-term group allowing much better prediction than S-M. In the former, the adjusted R^2 has a value of over .75, while it is only about .40 in the latter case. The reasons for this are no more apparent than before, and again we might conclude that we are ignoring some factor which is important in determining the emotional reactions of subjects in the S-M group. Summaries of the analyses are in Tables 3.27 and 3.28.

In some ways, the patterns of variables in the equations resemble those for the DI and the MI more than those of the other emotional measures. In the Long-term group, socialization in extended groups and the number of friends were both positively linked to the frequency of anger. The criterion variable was also associated with poor coping on the outside, and frequent thoughts of the past. Among background measures, only the number of previous convictions enters into the equation, while appraisal variables are not so important as for the other emotional criteria. Among S-M inmates, the angrier individuals spent more of their time working, but otherwise stayed out of their cells, presumably socializing.

Only one variable is duplicated on the lists for the two groups, and it is a rather interesting one, viz., whether the subject makes any conscious effort to control his thoughts. Evidently, anger is subject to control by deliberate choice, unlike the other emotional indices.

Summary. From the above analyses, it is clear that we can account for a very substantial proportion of the criterion variance in most cases. Thus, it is possible to predict adaptation from measures of background, coping and cognitive appraisals.

A few other generalizations are justified from the data. First, we

TABLE 3.27

Summary of Regression Analysis
for Anger Measure
(concomitant - all variables)
Group: Long

Overall statistics

Multiple R	.904
R squared	.817
Adjusted R squared	.756

Variables in the equation

Description	Beta Weight
Background	
Number of convictions (FPS)	.11
Coping process	
Attempts to control thoughts, I3	-.10
Socialization pattern, I1	.23*
Hours sleep, I3	-.47***
Number of friends in prison, I1	.24*
Frequency of thoughts of past, I1	-.31**
Coping Efficacy, Outside	-.23*
Appraisal-cognitive	
Specific problem: concern re safety	-.29**
Total problems mentioned, I1	.23*
Frequency missing people, I3	-.18

TABLE 3.28

Summary of Regression Analysis
for Anger Measure
(concomitant - all variables)
Group: Short-Medium

Overall statistics

Multiple R	.676
R squared	.457
Adjusted R squared	.397

Variables in the equation

Description	Beta Weight
Background	
Marital status	-.08
Age at first FPS entry	-.10
Coping process	
Proportion of total time spent working	.38***
Percent optional cell time	-.18*
Attempts to control thoughts	-.20*
Appraisal-cognitive	
Specific problem: uncategorized, I3	.21*
Appraisal of chance of new offenses	.22*
Specific problem: miss freedom, I1	-.15
Specific problem: miss family, I2	-.15

are able to account for the variance among long-term inmates better than in those with shorter sentences. The proportions of variance included in the regression equations were higher in the Long-term group for all five measures, and in two cases the difference was substantial. Why this should be so is not immediately apparent.

It also seems that background factors are not particularly important in determining our criteria, except for the DI. Clearly, the coping process and appraisal variables control a greater share of the criterion variance. Interestingly, coping process variables appear to predominate for the more behavioral criteria, i.e., for DI and MI, while appraisals and cognitive measures are most important for depression and anxiety. Anger appeared closer to the behavioral measures than it resembled the other emotions.

Finally, the factors which entered into the regression equations were different in each case. Most significantly, the same factors were sometimes implicated in opposite ways for different criteria. Actions which ameliorate the effects of stress in one sense, may also increase it in another.

Predictive Regression Analyses

The analyses in the preceding section are very useful in summarizing the correlates of the outcome criteria, and in giving a picture of the types of factors which are concomitantly related to them. However, the theoretical background of this investigation states not only that coping is related to adaptation. Rather, the claim is the much stronger one that coping largely determines the quality of future adaptation. To validate this claim it is necessary to show that we can use measures of coping to predict subsequent adaptation.

The analyses in this section repeated the procedure of constructing stepwise multiple regression models for each of the outcome criteria. However, the predictor variables were restricted to those from the first and second interviews. Since the emotional outcome measures were taken at the final interview, the prediction from the independent variables is at least a year in advance. In the case of the MI and DI, which measured behavior over an extended period, three-quarters of the period of coverage

was subsequent to the second interviews, so the predictive component is substantial.

We would expect the proportions of outcome variance accounted for by the present analyses to be less than those in the preceding set of analyses. However, the important question here is whether any substantial portion of the outcome variance can be determined by predictive measures.

Disciplinary Index. The results of the two analyses for the disciplinary criterion are summarized in Tables 3.29 and 3.30. As can be seen, both show that good proportions of the outcome variance can be predicted, with the adjusted R^2 just over .74 for the Long-term group and about .54 for S-M. These values are lower than in the previous analyses, but not by a great deal.

The lists of variables which enter into the regression equations are in both cases slightly shorter than in the preceding set, as would be expected, but the selection is quite similar. For the long-term subjects, the set of included background factors is the same as before. High rates of disciplinary punishment are also predicted by a history of alcohol abuse, poor current coping Efficacy, and socialization in large groups. Paradoxically, poor disciplinary history can be predicted if inmates reported that they missed people from outside relatively infrequently, but also if they felt more than others that they would like to receive an increased number of letters.

Among subjects in the S-M group, the selected predictors include measures of family background and previous criminal history. Again, there are variables indicating high drug use, poor coping and frequent socialization, as well as a pattern of living day-by-day.

In general, these analyses show considerable congruence between the patterns of variable selected for the two groups, and also results which are very similar to the previous analyses which used the larger set of independent variables.

Medical Index. Once again, the results of the predictive analyses look much like those which included concomitant measures, with a considerable overlap in the variables in the equations and similar

TABLE 3.29

Summary of Regression Analysis
for Discipline Index
(predictive - I2 and I2 variables)
Group: Long

Overall statistics

Multiple R	.903
R squared	.815
Adjusted R squared	.745

Variables in the equation

Description	Beta Weight
Background	
Family type at ages 6-11	.24*
Total number of convictions (FPS)	.18
Level of custody, I1	.13
Coping process	
Socialization pattern, I2	.15
Alcohol Use Index	.25*
Proportion of total time at group meetings, I2	-.10
Coping Modes Index, I2	-.13
Appraisal-cognitive	
Discrepancy between letters desired/received	.24*
Rating of job, Outside	-.23*
Total problems mentioned, I2	.30**
Frequency of missing people	-.25*

TABLE 3.30

Summary of Regression Analysis
for Discipline Index
(predictive - I2 and I2 variables)
Group: Short-Medium

Overall statistics

Multiple R	.785
R squared	.617
Adjusted R squared	.541

Variables in the equation

Description	Beta Weight
Background	
Presence of tattoos	.19*
Age at I1	-.25*
Level of custody, I1	.17*
Family type at ages 6-11	.21**
Father's occupation	.29***
Number of criminal friends	.13
Age at first FPS entry	.21
Presence of juvenile record	.00
Coping process	
Drug Frequency Index	.24**
Plan days or live day-by-day, I1	.20**
Number of visits, I2	-.15*
Proportion of total time spent socializing	.17*
Coping Efficacy, I2	-.17*
Appraisal-cognitive	
Appraisal of chance of appeal success, I1	.20**
Specific problem: concern re future, I2	.19*

proportions of outcome variance accounted for. In fact, for the Long-term group the adjusted R^2 value is actually higher in this analysis than in the previous type. The analyses are shown in Tables 3.31 and 3.32.

For long-term subjects, high scores on the MI were predicted by past difficulties in coping, possibly including suicide attempts, low-level coping in prison, and frequent thoughts about the past. Those with high scores also saw many problems for themselves in prison, and may have felt isolated, with few letters from the outside.

For the S-M subjects, the regression model predicts only about half as much variance as was accounted for in the Long-term group. However, there is some overlap between the variables in the two equations, including measures of poor coping and suicide attempts in the past. High scores were also predicted by frequent concerns with the future, and the specification of boredom as a problem.

Thus, the transition from concomitant analysis to prediction resulted in almost identical results in the case of the MI, with even the same puzzling difference in accountable variance between the two groups.

Depression. The Depression Inventory is the first to show any appreciable loss in explained variance when compared to the previous analyses. However, since the previous values were so high, the variance accounted for is still quite good. As may be seen in Tables 3.33 and 3.34, two-thirds of the variance was still predicted for the Long-term group, and about half for S-M.

As before, background factors play a minimal part in these equations. In the Long-term equation, coping evaluations do not enter explicitly, but specific coping behaviors are quite important. It appears that those who would become depressed were apprehensive about the future, and tried to avoid thinking of it. Relatively high scores could also be predicted for those who avoided any time alone in their cells. As expected, depression again depended on the attribution of responsibility for events to one's own actions.

In the S-M group, coping evaluations enter explicitly but paradoxically. As we would expect, Coping Efficacy on the outside was negatively predictive of depression, but the coping Variety measure was

TABLE 3.31

Summary of Regression Analysis
for Medical Stress Index
(predictive - I2 and I2 variables)
Group: Long

Overall statistics

Multiple R	.879
R squared	.773
Adjusted R squared	.716

Variables in the equation

Description	Beta Weight
Background	
Job training	-.19*
Coping process	
Coping Modes Index, I1	-.30**
Suicide Index	.22*
Frequency thoughts of past, I1	.31**
Appraisal-cognitive	
Total problems mentioned, I2	.35**
Discrepancy between letters desired/received	.32**
Specific problem: cell conditions, I1	.28**
Prison problems Scale, I2	-.22*

TABLE 3.32

Summary of Regression Analysis
for Medical Stress Index
(predictive - I2 and I2 variables)
Group: Short-Medium

Overall statistics

Multiple R	.620
R squared	.384
Adjusted R squared	.324

Variables in the equation

Description	Beta Weight
Background	
Social class	-.05
Coping process	
Suicide Index	.30***
Frequency of thoughts of future, I1	-.25**
Number of letter received, I1	.14
Alcohol Use Index	.03
Appraisal-cognitive	
Specific problem: medical services, I1	.31***
Specific problem: boredom, I2	.22*
Specific problem: uncategorized, I2	.22*

TABLE 3.33

Summary of Regression Analysis
for Depression Inventory
(predictive - I2 and I2 variables)
Group: Long

Overall statistics

Multiple R	.864
R squared	.746
Adjusted R squared	.672

Variables in the equation

Description	Beta Weight
Background	
Social class	-.05
Coping process	
Frequency thoughts of future, I1	-.27**
Percent optional cell time, I1	-.23*
Length of time in living arrangements outside	-.35***
Number of friends in prison, I2	-.19
Appraisal-cognitive	
Locus of Control Scale, total external, I1	-.25*
Specific problem: concern re future, I1	.29**
Total problems mentioned, I1	.22*
Rating of job, Outside	-.22*

TABLE 3.34

Summary of Regression Analysis
for Depression Inventory
(predictive - I2 and I2 variables)
Group: Short-Medium

Overall statistics

Multiple R	.729
R squared	.531
Adjusted R squared	.486

Variables in the equation

Description	Beta Weight
Background none	
Coping process	
Frequency receive news reports, I1	.32***
Socialization pattern, I2	-.11
Coping Variety, I2	.23**
Frequency of thoughts of the past, I2	-.14
Coping Efficacy, Outside	-.02
Appraisal-cognitive	
Prison Problems Scale	.33***
Locus of Control Scale, chance, I1	-.27**
Total problems mentioned, I2	.21*

positively weighted, indicating that higher scores predicted more depression. It is unclear whether this is the result of some quirk in the rating scale, or whether it reflects some important aspect of behavior. However, given the appearance of the Locus of Control scale on the list, it may be that depression occurred for those who had some coping resources and therefore expected to be able to remediate their problems; when they could not do so, the depression was all the greater. From the analysis we may also say that those who were most in contact with news from the outside became the most depressed. As before, the perception of a relatively high number of problems in prison was an important determinant, and this was accompanied again by the attribution that events were not controlled by chance, but by one's own actions.

Anxiety. Overall results of the analyses for the STAI are very similar to those for the depression measure, with about half of the outcome variance predicted for the S-M group and two-thirds for the Long-term group. Again this represents some decrease from the very high figures in the previous analyses, but the level of prediction remains quite good. Summaries of the analyses may be seen in Tables 3.35 and 3.36.

In the S-M group, the pattern of variables in the equation is much the same as before. In particular, infrequent thoughts of times outside the present predicted future anxiety. And the appraisal that one faces a large number of problems and deprivations was especially important.

For the long-term inmates, a different set of factors seem to be involved. Anxiety was predicted by poor coping, and by social isolation shown by relatively few friends in prison and a number of visits well below that desired. Other variables on the list indicate the effects of specific problems, especially worries about personal safety in prison.

Interestingly, the general appraisal measures implicated in the previous type of analysis, viz., Locus of Control, Social Desirability and Self-Esteem, did not reappear here. It would seem that they measured differences which accompanied anxiety, rather than predicting it.

TABLE 3.35

Summary of Regression Analysis
for Anxiety Inventory
(predictive - I2 and I2 variables)
Group: Long

Overall statistics

Multiple R	.861
R squared	.741
Adjusted R squared	.666

Variables in the equation

Description	Beta Weight
Background	
Number of siblings	.15
Social class	-.15
Coping process	
Number of friends in prison, I2	-.27*
Coping Efficacy, I2	-.29*
Appraisal-cognitive	
Specific problem: medical services, I1	-.24*
Specific problem: concern re safety, I2	.32**
Specific problem: concern re safety, I2	.22*
Discrepancy between visits desired/actual	-.27**
Specific problem: regrets re past, I2	.27*

TABLE 3.36

Summary of Regression Analysis
for Anxiety Inventory
(predictive - I2 and I2 variables)
Group: Short-Medium

Overall statistics

Multiple R	.729
R squared	.532
Adjusted R squared	.486

Variables in the equation

Description	Beta Weight
Background	
Years of school completed	-.13
Coping process	
Frequency of thoughts of future, I1	-.29***
Proportion of total time in passive activity, I1	.09
Frequency of thoughts of the past, I2	-.16
Coping Efficacy, Outside	-.16*
Appraisal-cognitive	
Prison Problems Scale, I2	.41***
Activity Deprivation Index	.20**
Appraisal of chance of appeal success, I1	.13

Anger. The reported frequency of feelings of anger had been the most poorly explained of all the outcome measures in the previous analyses. To add to this, the decrement from concomitant to predictive analyses was by far the greatest in this case. Thus, in the predictive analyses, only 13% of the variance in the S-M group and 32% in the Long-term group are accounted for. Tables 3.37 and 3.38 show the summaries.

In the S-M group, two of the four variables which enter into the equation are background items, and indicate that anger was more frequent among those who were unmarried on the outside, and whose first criminal conviction had been at a relatively young age. Other than these, the only listed variables predicted more frequent anger for those who spent little time in their cells and who were not troubled with missing people from the outside.

In the Long-term group, only 3 variables enter the equation. It appears that anger was more frequent for subjects who had more previous convictions, socialized with other inmates in larger groups rather than staying on their own, and missed people from the outside only infrequently. This pattern resembles stereotypes of the "habitual offender", for whom anger is certainly a very common problem.

The lists of factors which predict anger are thus very similar for the two groups. Unfortunately, the entire set is not very powerful in either case, although the proportion of variance accounted for is still a respectable amount for the Long-term group.

Inspection of the lists of variables in the previous set of analyses shows why the current set is so much weaker, for most of the variables in the concomitant analyses were from the third interview. This was not generally the case with the other outcome criteria. However, even when third interview variables had been listed for the other measures, they were replaced in the regression equations by equivalent measures from the first and second interviews, with little loss in statistical usefulness.

Third-interview variables lost for the predictive regression analyses for anger were not replaced, indicating that this measure may be related to coping and appraisal concomitantly, but that it is not well predicted by the same factors. From this we may conclude either that the measure of anger used here is inadequate, or that anger is not well determined by

TABLE 3.37

Summary of Regression Analysis
for Anger Measure
(predictive - I2 and I2 variables)
Group: Long

Overall statistics

Multiple R	.612
R squared	.375
Adjusted R squared	.324

Variables in the equation

Description	Beta Weight
Background	
Total number of convictions (FPS)	.30*
Coping process	
Socialization pattern, I1	.43**
Appraisal-cognitive	
Frequency of missing people, I2	-.27*

TABLE 3.38

Summary of Regression Analysis
for Anger Measure
(predictive - I2 and I2 variables)
Group: Short-Medium

Overall statistics

Multiple R	.415
R squared	.173
Adjusted R squared	.134

Variables in the equation

Description	Beta Weight
Background	
Marital status	.16
Age at first FPS entry	-.13
Coping process	
Percent optional cell time, I2	-.23*
Appraisal-cognitive	
Specific problem: miss family, I2	-.19

patterns of coping and cognitive appraisal. Both of these suppositions seem reasonable and likely; probably each accounts for part of the problem.

Generalizations. From the above set of regression analyses, a number of conclusions are justified. First, and most important, it is clear that some very important measures of adaptation can be predicted well in advance by a coping analysis. While a greater amount of variance was generally explained when concomitant measures were included, the proportion of outcome variance subsumed in the predictive analyses was gratifying. By the standards of previous investigations, the present figures are very impressive: the proportions of variance predicted are on the average two to three times the levels in previously published studies.

At the same time, there are clear differences in our ability to predict across outcomes. It is not surprising that the most objective behavioral outcome, the Disciplinary Index, is the best predicted, and that the ad-hoc measure of Anger was predicted relatively poorly.

Along with differences in predictability, there were also differences among the outcome measures in terms of the factors which entered into the predictive equations. As a rough generalization, we can say that coping measures along with a few background factors were the principal determinants of the behavioral measures, DI and MI. For the BDI and STAI, cognitive appraisals were quite important, along with some measures of specific coping behaviors, and background factors virtually disappeared. Finally, Anger did not resemble either the behavioral outcomes or the other emotional measures very well.

Thus, if we ignore the anomalous Anger measure, there seem to be two pairs of outcome measure. This conclusion is reinforced by examination of the exact behavior patterns which seem to be involved for each criterion.

It is interesting that the DI and the MI show such resemblance in their determinants. It is as if we are measuring determinants of a general behavioral expression of stress, and only minor differences determine whether problems will show themselves internally, as medical symptoms, or externally, in rebellious or hostile actions.

Similarly, there seems considerable commonality between the

determinants of anxiety and depression. It would appear that both states are engendered by very similar conditions, with only relatively minor factors determining which will predominate. Such a conclusion is consonant with the close ties between anxiety and depression on a clinical level. Often, it appears that they are two aspects of the same inability to deal with life's problems, with the predominant element varying from time to time.

In any case, there is no denying the finding that the theoretical model used in this study allows us to predict four basic outcome criteria quite well empirically. There are a few other observations which should be made here. One is that we are able to predict the behavior of long-term inmates better than that of our shorter-term subjects. Perhaps this is because there are also differences between short-term and medium-term offenders. If the S-M group had been subdivided into the original Short and Medium groups, the results might have been more comparable to those for the Long-term group. However, this was not done here because the proportions who were released or transferred before the last interview were higher than expected, and the numbers remaining were inadequate for comprehensive separate analyses.

It is also interesting to note some of the functional operations of variables in the several regression equations. For example, variables representing thoughts of the future and thoughts of the past appeared to be functionally equivalent, often substituting for each other from analysis to analysis. It appears that the important contrast is between a pattern which concentrates on the here and now, and one which reaches beyond the immediate moment. Similarly, the several variables representing aspects of socialization appeared to be mostly interchangeable. Socializing in large groups, having many friends, spending a large proportion of time in socializing, and avoiding spending time in one's cell are all different indices of a highly related set of behaviors. A factor analyses of the predictor variables used here might show this more clearly.

Given these equivalences, some of the differences between the sets of variables in the regression equations for the several outcomes are striking. There are several cases where a given variable enters into equations for different outcomes with Beta weights of opposite signs,

indicating effects in opposite directions. When one looks at the operations of variables in the equivalent sets described here, many additional cases of the same phenomenon are visible. Thus, socialization variables show negative Beta weights for depression and anxiety, but positive weights for discipline and medical outcomes. Thoughts outside the present show a similar interaction.

It appears that there may not be an optimal pattern of coping with situations like those one finds in prison. Given that stressful situations occur, one has the choice of dealing with them in ways which direct the damage, but it may sometimes be difficult to avoid any deleterious consequences. Of course, the most successful patterns of coping result in long-term solutions which remove problems, and in such cases there may be no negative consequences. However, many of the problems faced by prison inmates are almost inevitable results of imprisonment, e.g., missing loved ones. As such, they are practically insoluble, particularly for those with long sentences. In such cases there is clearly a tradeoff: behaviors which help in one way may hinder in another.

Certainly, this means that we must also be careful in defining what we mean by successful adaptation to imprisonment. It is all too easy to look at a single criterion of maladaptive behavior, in the expectation that other measures will work similarly. Our results show the fallacy of such assumptions.

On a practical level, the tradeoffs among the various outcome criteria indicate the uselessness of facile attempts to change inmates by manipulation of the prison environment. For example, it would be possible to run a prison in a way that minimizes inmate social interactions and weakens the inmate social network. From the analyses above, we might predict that this would lead to a reduction in disciplinary problems. However, it would also result in increases in emotional disorders, which could be even more costly in the long run. We would argue that the only ways to reduce the overall level of maladaptive behavior are to teach inmates high-level coping skills, and, of course, to reduce the level of real environmental stress which they must deal with.

On a theoretical level, these results challenge the entire notion of a unitary construct of stress. If the same behavior can affect different

measures in opposite ways, then there must be more than one system which is affected. Alternatively, we might say a unitary construct is entirely misleading, and adopt instead an approach which relates particular kinds of adaptation to specified patterns of behavior. In the end, this would form a complete picture, like the behavioral sketches attempted here but more complete and perhaps more definitive.

Hierarchical Regression Analyses

The preceding analyses show the predictability of outcome criteria from the various measures included in this study. Indirectly, they also show that coping and appraisal measures are quite important in the predictions, since they predominate in most of the analyses. However, such a central point should be shown directly.

In this section we present a final set of regression analyses, which are designed to compare the predictive usefulness of our different types of measures. The independent variables which entered into the equations were the same as in the preceding analyses. However, in the present case all variables were allowed to enter the regression equation, with items within each of the three sets entered simultaneously, and the sets entered consecutively. Thus, we can compare the increments in accountable variance which are attributable to each set. As before, the background variables were given precedence, i.e., they were allowed to enter the equation first, and the coping process and appraisal measures followed in order.

The entire set of hierarchical analyses is summarized in Tables 3.39 to 3.43. It is apparent that the adjusted proportions of outcome variance accounted for by these analyses are in general lower than in the stepwise analyses in the previous section. This is because of the presence of many redundant variables which were eliminated in the stepwise analyses. The hierarchical procedure does not arrive at an optimal predictor set because all listed variables are entered into the equation, regardless of their usefulness, thus depressing the adjusted R^2 values particularly.

Of greatest importance in the tables are the figures showing the increase in R^2 attributable to each group of measures. By this metric, the coping set is the most powerful for every measure except the DI. In most cases, the increase in variance provided by the coping process variables

TABLE 3.39

Summary of Regression Analysis
for Discipline Index
(hierarchical)

Analysis for Long group						
Predictor set	R	R ²	Increase in R ²	F for increase	p	Adjusted R ²
Background	.590	.349	.349	4.81	<.01	.276
Coping process	.834	.695	.347	2.01	ns	.470
Appraisal/cognitive	.929	.864	.169	1.93	ns	.611
Analysis for Short-Medium group						
Predictor set	R	R ²	Increase in R ²	F for increase	p	Adjusted R ²
Background	.635	.404	.404	4.46	<.001	.313
Coping process	.773	.597	.193	1.99	ns	.418
Appraisal/cognitive	.837	.701	.103	1.84	ns	.487

TABLE 3.40

Summary of Regression Analysis
for Medical Stress Index
(hierarchical)

Analysis for Long group						
Predictor set	R	R ²	Increase in R ²	F for increase	p	Adjusted R ²
Background	.278	.077	.077	3.26	ns	.053
Coping process	.721	.520	.442	4.21	<.01	.400
Appraisal/cognitive	.894	.801	.281	6.12	<.001	.694

Analysis for Short-Medium group						
Predictor set	R	R ²	Increase in R ²	F for increase	p	Adjusted R ²
Background	.244	.059	.059	2.82	ns	.038
Coping process	.532	.283	.223	2.21	<.05	.163
Appraisal/cognitive	.672	.452	.169	3.70	<.01	.307

TABLE 3.41

Summary of Regression Analysis
for Depression Inventory
(hierarchical)

Analysis for Long group						
Predictor set	R	R ²	Increase in R ²	F for increase	p	Adjusted R ²
Background	.537	.288	.288	4.99	<.01	.230
Coping process	.785	.617	.329	3.11	<.05	.471
Appraisal/cognitive	.894	.798	.182	1.71	ns	.576
Analysis for Short-Medium group						
Predictor set	R	R ²	Increase in R ²	F for increase	p	Adjusted R ²
Background	.172	.030	.030	2.76	ns	.019
Coping process	.546	.298	.268	3.92	<.001	.221
Appraisal/cognitive	.752	.565	.267	5.68	<.001	.465

TABLE 3.42

Summary of Regression Analysis
for Anxiety Inventory
(hierarchical)

Analysis for Long group						
Predictor set	R	R ²	Increase in R ²	F for increase	p	Adjusted R ²
Background	.417	.174	.174	4.00	<.05	.131
Coping process	.784	.615	.441	3.20	<.01	.450
Appraisal/cognitive	.921	.848	.233	1.77	ns	.594
Analysis for Short-Medium group						
Predictor set	R	R ²	Increase in R ²	F for increase	p	Adjusted R ²
Background	.237	.056	.056	2.66	ns	.035
Coping process	.578	.334	.278	4.22	<.001	.252
Appraisal/cognitive	.777	.603	.269	3.90	<.001	.477

TABLE 3.43

Summary of Regression Analysis
for Anger Measure
(hierarchical)

Analysis for Long group						
Predictor set	R	R ²	Increase in R ²	F for increase	p	Adjusted R ²
Background	.410	.169	.169	2.50	ns	.101
Coping process	.691	.477	.309	2.14	ns	.279
Appraisal/cognitive	.830	.688	.211	4.23	<.01	.501
Analysis for Short-Medium group						
Predictor set	R	R ²	Increase in R ²	F for increase	p	Adjusted R ²
Background	.292	.085	.085	2.73	<.05	.054
Coping process	.441	.194	.109	2.25	ns	.117
Appraisal/cognitive	.546	.298	.104	1.39	ns	.149

was statistically significant; where it was not, there was only one case where it was not close to significance ($p < .06$)

Background measures were inconsistent in their contributions. They were the most powerful determinants of the DI, but otherwise they generally produced the smallest change in accountable variance of the three sets. Even so, for the Long-term group, the background set still accounted for reasonable proportions of variance in all measures except for the MI (from about 15% to almost 30%). However, for the S-M group the contribution of background factors was more or less negligible (from about 8% down to 3%) for outcomes other than the DI. Perhaps this is why the overall proportions of variance explained in the previous analyses were less for the S-M group.

Appraisal and cognitive measures seemed to be consistently useful in every case, although they were never the most powerful single set. Their contributions ranged from just over 10% to close to 30% of total outcome variance, with the change in accountable variance statistically significant in half of the analyses.

Considering the precedence it was allowed, it appears that the background set is not a very powerful determinant of most of the outcomes. In contrast, the coping and appraisal measures were generally able to account for greater proportions of outcome variance, even though they were entered only after the background set. Although the figures for the coping set are better than for the appraisals, it is difficult to make a fair comparison between the two, since the coping sets were entered first into the equations.

In any case, it is clear that the coping and appraisal sets make an important contribution to the prediction of outcome variance which is beyond that explainable from background factors alone. One of the primary objectives of this study was to show the usefulness of an empirical analysis of coping behavior. The hierarchical regression analyses show that coping theory allows us a very considerable advance in predictive capacity beyond the level possible with previous models.

DISCUSSION

Given the size and complexity of this study, it would be foolhardy to try to deal with all of the results and implications at one time. For this reason, the preceding sections have included frequent summaries and discussions with the presentation of the results.

However, some general conclusions are possible, and this chapter will attempt to present them briefly. Since the study is relevant to several different areas, we will consider each in turn.

First, we will discuss the implications of this work for coping theory. Then, we will relate the results to our knowledge about the causes of criminal behavior and the effects of imprisonment. Finally, some implications for the treatment of criminal offenders and recommendations for possible changes will be presented.

Coping theory

Without doubt, our results provide considerable reinforcement for the interactionist approach and for coping theory in particular. We have established that the quality of coping can be reliably scaled and measured. Moreover, the resultant scores show a coherent pattern of relationships with other variables, especially those measuring specific behaviors.

Even more important, the measures of coping ability combine with some of the specific behavioral measures and with appraisals, to enable prediction of later scores on a variety of adaptational criteria. The level of prediction was excellent, especially when one considers that the outcome measures are not wholly reliable. The reliabilities for the STAI and the BDI have been previously measured, and although they are high, they are of course far from perfect. Our Anger measure may have been much more unreliable, and certainly its range of variation was too small for it to have been a good outcome measure; as discussed above, it was chosen because better measures were not available.

Our "behavioral" outcome indices are also far from being perfect measures, for the data they summarize contain many uncertainties and inconsistencies. These are bound to occur, but they mean that measures

based on readings of file records can never be an entirely accurate reflection of inmates' actual behavior.

Thus, the degree of prediction achieved for our outcome measures was remarkably good. Indeed, we might claim that our regression equations allowed us to predict almost all of the reliable variance for several measures, at least for our long-term group. Even if we cannot substantiate so strong a conclusion, it is unquestionably clear that a very large proportion of the outcome variance was predicted in almost every case.

It is also clear that the coping model predicts much more successfully than those used in previous studies. This is shown both externally, by comparison of our results with those in the previous literature, and internally, in the comparisons between background factors and coping-appraisal measures.

Thus, we have good evidence in support of the general direction of the coping model. At the same time, the details of our findings bear on the details of the theory in several ways.

First, it should be pointed out that our results were sometimes at variance with the details of Lazarus' model. When confronted with descriptions of actual coping responses, it proved impossible to use the classification scheme he has described. This is likely because his categories are organized in terms of the purpose of responses, and in practice this was impossible to ascertain reliably. Subjects remember their actions in a situation, but they do not store those behaviors in memory according to their intended functions.

It is likely that the quality of a response is more important than its type. One may use high-level strategies poorly, or weave an elaborate coverage from the thinner strands of low-level coping responses. In addition, the effectiveness of a response is probably the most important factor in determining subsequent links in the chain of events, actions, results, and further actions. Thus, our measures of Efficacy were relatively important both in the conception and in the results of this study. Although the efficacy of coping responses has not been given a prominent place in previous discussions of coping, this study shows its importance in any comprehensive empirical analysis.

Our results show two other features which are of some theoretical

interest. First is the relationship between measures of specific behaviors and overall indices of coping ability. In the correlational analyses there appeared a coherent set of behaviors which were related to the quality of coping. Thus, good coping in inmates was characterized by planning, goal setting, and low rates of social interactions with other inmates. In the subsequent regression analyses there appeared to be some amount of equivalence between the specific behavioral measures and overall indices; at times it seemed as though they were able to substitute for each other in the equations. Thus, good coping may be defined either by an overall measure of efficacy, or in terms of some specific behaviors which accompany it. This is not to say that the two are the same, but only that they are sometimes statistically equivalent.

To some extent this reflects only the criteria used to define good coping in our ratings of Efficacy, e.g., the ratings considered evidence of concerted planning to be an important component of good coping. On the other hand, some of the behaviors which defined good coping had not been considered at all in the ratings, e.g., patterns or rates of socialization. Thus, we may hypothesize that good coping results in the acquisition of certain behavior patterns, probably because those behaviors facilitate coping.

Comparisons of the results for the various outcome measures are also of some interest. It was not the case that the same behaviors were predictive of successful adaptation on all measures. Each outcome criterion was predicted by slightly different types of variables. In general, coping variables were the most important in predicting values on the behavioral criteria, but appraisals predominated for the emotional outcomes. This is as one might expect, since specific activities ought to be influential in determining measures of overt behavior, while emotions are largely under the control of covert behavior, viz., thoughts and appraisals of events.

Many recent theories have hypothesized that emotional responses are mediated by cognitions. For example, depression has been linked with specific cognitive antecedents (Beck, 1976). While some previous evidence has shown differences in cognitions between depressed and nondepressed individuals (e.g., Shaw, 1982), there has been little in the way of

predictive demonstrations. The present study provides such evidence, showing that depression can be predicted from expectations, attributions and appraisals.

Thus, the kinds of factors which were important in predicting the respective outcomes varied, and the selection may be meaningful. However, our data showed not only differences in the sets of factors predicting each outcome, but sometimes even differences in the direction of influence for a particular variable. For example, intensive socialization may be helpful in avoiding depression or anxiety, but it leads to increased risks of disciplinary infractions. Several other cases show similar contrasts.

On one level, this implies that there is a tradeoff in behavior. One must choose one's objective in order to specify the best way of reaching it, and there may be some clash between objectives. Our data thus show that one must sometimes sail a narrow behavioral course between a Scylla and a Charybdis of maladaptive consequences.

If we generalize speculatively, we might say that such a situation reflects the limitations of adaptation in everyday life. Every benefit has its costs, and the roads we choose to follow determine the potholes into which we will fall. Psychological survival comes at the cost of some inevitable difficulties. Of course, the better one is able to cope, the easier may be the path overall, but there is no strategy that does not have its failings somewhere. Still, if happiness exists, it comes in successfully overcoming problems, rather than their nonoccurrence. Clinically, this suggests that the most successful strategy for teaching individuals to cope better would lead them to flexible and varied approaches which minimize the average severity of expectable problems, rather than attempting to deal perfectly with a single sort of problem.

On a higher theoretical level, we are led to call into question the unitary notions of stress and adaptation. In the end, it may be that adaptation can be defined only in terms of the relationship between specific behaviors and particular criteria. Otherwise, a given behavior might appear to be both adaptive and maladaptive, depending on one's choice of criteria. Of course, this does not mean that the effectiveness of coping cannot be maximized or improved, but the conflicts between outcomes which sometimes occur indicate that perfect coping is not attainable.

Thus, the conclusion to be taken from these results is that there is a practical limit to the goodness of adaptation, but this is not a great constraint. However, on a theoretical level there needs to be some rethinking of fundamental notions. In the end, theories must become more specific than has heretofore been the case.

The causes of criminal behavior

Our data also have some important implications for theories of the causes of criminal behavior.

To begin with, the basic premise of the study was that behavior results from an interaction between environmental and personal factors, and this is substantiated by the data. It therefore becomes clear why previous studies have shown only weak effects for either sort of influence alone: most of the interesting variance is in the interaction.

Thus, the historical controversies between environmental and personality theories, or deprivation and importation theories, are seen to be somewhat irrelevant. As is usual in the case of theories based on slogans rather than data, each of the antipodally opposed theories is clearly incorrect, even though each has some element of truth.

Even more important, the results of this investigation give some indications of the more detailed working of the process. While we are still missing some essential data, it is possible to sketch out many of the elements of a coping explanation of criminal behavior.

We have shown here that poor coping within the penitentiary will lead to relatively poor subsequent adaptation. For example, inmates who coped poorly were likely to commit infractions of institutional rules, and they incurred relatively high amounts of disciplinary punishments. This is not attributable to inexperience or ignorance of procedures, for it is clear that our subjects knew the rules but violated them nevertheless. It is also the case that they almost always experienced their punishments as truly negative events. Thus, regardless of their rationalizations for or understanding of their behavior, they managed to act in ways that made their lives more unpleasant. Whether or not one agrees with the use of punishment as the primary formal means of controlling behavior, it must be admitted that many if not most of the negative events they experienced were

brought about by their own actions.

Similar relationships obtain with indices of adaptation other than the length of disciplinary records, but this particular criterion is most relevant to hypotheses about the causes of criminal behavior. If coping ability and strategies inside prison are predictive of rule violations there, one might predict that poor coping on the outside would be similarly related to the commission of actions which are counted as criminal offenses. We will call this prediction the coping-criminality hypothesis.

Everyday life is sometimes difficult, and most of us are from time to time presented with situations that are difficult to deal with. Some individuals have inadequate ability to cope with the problems they encounter, and we can therefore predict that they will likely show maladaptive behavior of one sort or another. The results will be seen in a variety of ways, not always undesirable: some will show emotional problems, some may break under the stress and become psychotic or otherwise debilitated, but others may find effective help or simply devolve into eccentricity. If some people who cannot cope will become antisocial and violent, others may simply withdraw and find their own solitary fates, or resign themselves to lives of quiet desperation.

Parts of our results may contain clues to the factors which link poor coping with crime. The data presented earlier show not only that prison inmates cope poorly, but also that they have a characteristic set of specific behaviors outside of prison. Most of the elements of the description are not new or unique to this study. However, we may hypothesize that individuals who have poor coping ability, and who also show the pattern of behaviors described here, will be those who are likely to commit criminal acts. Thus, the unstructured impulsive lifestyle, dependence on frequent casual socialization, lack of planning for the future, and other similar behaviors seen here, would all act to channel the effects of inadequate coping ability into violent and antisocial actions.

We would not claim that this theory can predict every form of criminal behavior, for there are certain classes of actions which are outside of its scope. Although they are not a large proportion of the prison population, there are bound to be some well-adjusted criminals who act purely for material gain, those who are weak in the face of extraordinary temptations,

or others who are under the spell of fanatical political or religious ideologies. Also, we would except those who commit offenses which are widely condoned by subgroups in the population, such as the use of cannabis, and those whose "criminality" is defined politically. Still, cases of most of these are atypical, at least in the Canadian experience: we saw no political prisoners and no religious zealots among our subjects, and at best only a very few who might be considered "professional" criminals. Thus, the coping-criminality hypothesis stated here is intended to deal with most examples of violent or habitual offenders seen in populations like those we examined.

Some evidence for the hypothesis comes from previous studies of the patterns of offenses committed by recidivists. It has consistently appeared that those guilty of repeated offenses show little consistency in the crimes for which they are convicted, and most men with long criminal records show convictions for a wide variety of offenses (Chaiken & Chaiken, 1982). This finding has been used to support notions of persistent dispositions toward criminality (the "bad seed" hypothesis) but it is also entirely consistent with the expectations of the coping explanation. The coping-criminality hypothesis will predict that an offense might occur, but it says that the details of the crime will depend largely on local circumstances of opportunity and elicitation, and this includes the type of offense.

Of course, our hypothesis goes beyond the present data in several respects, and it may prove to be incorrect in its predictions for behavior outside of prison. We have shown only that coping in prison is related to subsequent adaptation there. From this, it is logical to theorize that coping on the outside is similarly related to the occurrence of criminal offenses, but such a prediction must be substantiated by further work. The present study does provide some evidence on the question, for most of the convicted criminals in our sample appear to have coped poorly on the outside. However, such evidence is far from definitive, principally because of its retrospective nature. If our subjects' coping ability had actually been assessed while they were still living on the outside, it would probably have seemed just as poor as it appeared to us at a later date. But this is not certain. Memory does sometimes misrepresent the

past, occasionally even in systematic ways.

More important is the risk of making a retrospective inference based on the characteristics of a selected population. If criminals cope poorly outside of prison, it does not necessarily follow that poor coping will lead to crime. Even if we include our specification above of certain associated behaviors, it may be that poor coping is the norm for much of the population, or that criminal behaviors occur first and then lead to the development of poor coping. Mistaken inferences taken from surveys of a clinical group have been all too common in the history of psychology, and we must recognize that the present data may be interpreted in several ways.

(We see an example of this in reference to other aspects of our data. A few previous investigators have observed among prisoners some of the behavioral characteristics we observed, particularly the dependence on social interactions and the narrowness of inmates' temporal perspectives. Because the observations were done in prison, the inference was made that they reflected the effects of imprisonment. Post hoc ergo propter hoc. However, our data indicate that the observed behaviors were also visible on the outside, prior to imprisonment. Thus, we see a case where retrospective causal inferences led to conclusions that are probably false.)

Additional evidence must be provided to strengthen the evidence for the causal interpretation of the link between poor coping and criminality. The most direct evidence would come from a large-scale longitudinal study of a randomly selected population of individuals. The causal hypothesis would predict that those who showed certain specified behaviors and also coped poorly would be likely to commit criminal acts in the future. However, such a study would be obviously impractical, and the results might be meaningless in any case. For example, many criminals show delinquency at a very early age, so the measurement would need to be done with children; at the same time, there is undoubtedly a great deal of development in coping and other behavior which occurs during and after adolescence, so that early measurements would be premature and not generalizable to later ages.

Still, the theory outlined here is not without testable predictions. Our data show that a history of previous imprisonment is associated with

poor coping, and thus it might be the case that imprisonment produces poor coping, rather than the reverse. To test this, one could carry out a study similar to the present one, using only first-time offenders, e.g., juveniles with no previous criminal records. According to the causal hypothesis, individuals apprehended for the first time should show evidence of coping difficulties. It would be important to include a matched group of individuals who had not shown criminal behaviors, in order to set a normal level of coping ability. If the apprehended individuals do not cope more poorly than those in the comparison group, the causal hypothesis will be falsified.

The coping-criminality hypotheses also applies in other areas. In its simplest form it assumes that there is little difference between a person's first criminal behavior and subsequent offenses, and that the determinants in each case are essentially identical. Thus, we can also apply the hypothesis to the recurrence of criminal offenses, i.e., the prediction of recidivism.

If poor coping leads to criminal acts originally, then it should do so all the more for those who are released from prison. We can predict that the likelihood of a new offense will vary with the measures of coping Efficacy for life outside of prison. An effective test of this prediction would be a study like the present one, with general and specific measures of coping on the outside gathered before release, and determination of subsequent recidivism.

Such a study would also be similar to others which have attempted to predict recidivism, and its general design could follow their procedures. However, with the addition of coping process measures we would expect to be able to predict recidivism with a much higher degree of accuracy than previous attempts. If this could be done successfully it would be of considerable practical use, e.g., in making parole decisions. Given the time involved, the study might be limited to short-term offenders, with measurement of ability to cope on the outside taken at the beginning of their terms.

Within the present investigation it is possible to conduct a small-scale analogue of a recidivism study. By the time of this report, the majority of our short-term subjects had already been released, and

within a year all of the group ought to have been released. Given that we already have the coping data on these subjects, the necessary analyses can be done quite easily if the recidivism data are made available. We would very much like to see the results of this simple extension of the present work, at least as a preliminary assessment of the usefulness of the larger recidivism study envisioned above.

In summary, the results we have obtained provide a good basis of evidence for the predictive usefulness of a coping analysis. If we extend the range of prediction, we can use our evidence to generate a fairly comprehensive model for some of the principal factors in the causation of criminal behavior. This model is of course consistent with the data from this investigation, but it also makes a number of testable predictions for further work. It would be foolish to expect that any model could ever define all of the causative factors in the genesis of criminal behavior, for the subject is as complexly and multiply determined as all human actions. Still, the use of the interactionist approach leads to what may be a sizeable advance in our understanding of the process.

The effects of imprisonment

Most of the above discussion has dealt with projections from the present study toward general theoretical considerations. However, our data also provide much empirical information about the effects of imprisonment. No comparable data about changes in behavior over the course of the first year of a prison term have been previously available.

Although there have been a very large number of claims about the supposed deleterious effects of imprisonment, hard evidence is not easy to find. One may divide the changes which are hypothesized to occur into three general types: intellectual, emotional and behavioral. The data of this study are pertinent to the latter two of these categories.

We can make two generalizations about our findings with the dysphoric emotional states measured. First, at the beginning of their terms many subjects showed signs of considerable emotional disturbances. For example, an alarmingly high proportion showed indications of depressive states of clinical magnitude. Thus, the initial effect of a prison term is emotionally devastating for many offenders.

However, the second feature of our results is that for most subjects the initial traumatic effects of imprisonment were greatly alleviated over time, and by the end of the study only a few still showed evidence of serious emotional distress. While this pattern seems almost intuitively obvious in hindsight, it has not previously been documented very clearly; if our conclusion about emotional acclimitization to imprisonment has been stated before (e.g., Sapsford, 1983) it required a great inductive leap over a field of fragmentary data.

The present results should help to resolve the mass of conflicting claims about the emotional effects of imprisonment. It has often been stated that disastrous and perhaps permanent emotional effects develop over time in prison, but this is clearly incorrect, at least for the average inmate.

However, it should also be noted that even at the end of the study the mean levels on several emotional indices were probably still elevated, even though they had dropped to levels within the normal range. It is likely that many subjects were still not entirely acclimitized, and that a followup study would demonstrate further decreases in dysphoria at a later time. Sapsford (1978) found differences in Hopelessness - one of the scales also used here - between groups of inmates who had served 15 months and 6 years. Considering that his first group was measured at a time equivalent to the end of the present study, this suggests that the process of emotional adjustment seen here continues over several years, although at a decreasing rate.

Alternatively, it may be the case that many subjects would have scores that remain permanently above normal levels. However, this in itself would not constitute evidence for deleterious emotional effects of imprisonment, because there are reasons to expect that many subjects entered prison with substantial emotional problems. For example, the data on the amount of alcoholism on the outside certainly indicate the likely presence of accompanying previous depression for many subjects, and a substantial number also reported previous treatments for emotional problems. Even without this evidence, the coping-criminality hypothesis would almost demand that at least some offenders would have shown emotional disorders prior to imprisonment. In the ideal case, it would be desirable to have

measurements of subjects' emotional states before arrest, to compare to their scores in prison, but this is of course practically impossible.

In summary, our data on emotional states indicate that there are severe problems which are visible at the beginning of a prison term. Fortunately, the disturbance is evanescent, and over the course of time it seems to dissipate. While this indicates that there is generally no sizeable long-term emotional damage from imprisonment, it also reveals a considerable amount of distress in the early stages which should not be minimized: one cannot lightly dismiss emotional disturbances for the reason that they will last only a year or so. Therefore, these results have some implications for the psychological treatment of offenders and for correctional policy, to be discussed below.

In addition to emotional measures, our data also provide evidence about changes over time in prison for several categories of specific behaviors. In general, it appeared that inmates' outside behavior patterns were originally disrupted by imprisonment, but over time much of the original pattern was reestablished within the prison. For example, the aimless, unplanned lifestyle on the outside was interrupted at the beginning of the term by some efforts at planning and interest in self-improvement, but a year and a half later most of the impetus for change had dissipated and inmates had fallen back into their former habits of drifting through time. As in the case of emotions, we conclude that imprisonment had only a transitory effect on most behavioral aspects of our subjects' lives.

At the same time, the pattern of monotonic changes was not seen for all behavioral measures. For example, in some cases the differences over time seemed to be U-shaped. Among these, the amount of social interaction among inmates increased for a while, probably showing the development of new relationships and friendships; however, by the time of our last interview there had been significant decreases. We interpret these latter changes as the beginning of an increased psychological isolation characteristic of men who have been imprisoned for a long period. In these cases it is likely that the process was only still beginning at the time of our final interview, and another measurement at a later date is clearly necessary to provide a more definitive indication of the long-term effects.

Thus, from the available data we can say that different aspects of

behavior change at different rates and with different characteristic patterns. The general shapes of the functions for each measure could not easily have been reckoned in advance. The obtained pattern of rather complex relationships reinforces the arguments in the introduction favoring the use of a longitudinal design, for a cross-sectional design would almost certainly have led to erroneous conclusions.

In summary, most behavioral measures show again that the effects of imprisonment seem to be minimal and mostly limited to the beginning of the term, with old patterns asserting themselves after a while as inmates become accustomed to their new environment and living conditions. The exceptions to this are some indications of a long-term syndrome which develops belatedly and slowly. Thus, the commonly heard apprehensions about the immediate and universal deleterious effects of imprisonment are shown not to be supportable in reality, but long-term confinement may lead to some behavioral adaptations which seem clearly undesirable.

This generalization from our findings that the visible effects of imprisonment are generally minimal is in agreement with some other recent work, including a recent review of the literature by Walker (1983). When combined with the results of the Durham studies (Bolton et al., 1976) showing a lack of change in intellectual abilities, our data on emotional and behavioral measures only strengthen the claims that imprisonment in itself produces on the average no major systematic changes in the functioning of prisoners.

It should be noted that the above discussion considers average measures from our entire sample. In addition, we can also look at differences owing to particular concomitant factors. The results of such comparisons can be an important source of information for inferences about the effects of imprisonment in addition to those examined above.

Among such comparisons, it is important to recall first that the effects of sentence length alone are rather trivial. Aside from a few differences in such areas as appraisals of the future, those facing very long terms were not unlike other inmates in their adjustment or basic behavior patterns in prison. These results lead us to the conclusion that long sentences show their effects in the serving, but not in the anticipation. The implications for institutional policy should be obvious,

but they will be restated later in any case.

In contrast to sentence length, there were more visible differences related to the amount of time previously served in prison. Those without previous imprisonment had shown the expected pattern of better adjustment on the outside, but they also were better able to cope with situations in the penitentiary. In addition, they showed some indications of better emotional adjustment in prison and even seemed to present less problems for institutional management. In most of the cases where differences appeared they were systematically related to the amount of previous imprisonment, so that the more an individual had been in prison before the worse was his behavior.

There are several possible explanations for effects like these. The first is that prison experience teaches people to cope poorly, or that it causes inmates to learn bad habits and maladaptive ways of dealing with situations. However, we found no evidence for this in our results. The time between interviews in this study was comparable to the average amount of previous imprisonment for subjects, i.e., the amount of time served which could have produced the differences we found at the beginning of the term. Thus, if prison leads to deterioration, we would expect to have seen a decrease across interviews in measured coping ability; the only change visible across interviews was a slight improvement in measured coping Efficacy. Thus, this explanation may be rejected.

A more plausible explanation derives from observation of the differences between conditions in prison and those outside. As was argued before, one's choices in prison are limited and behavior is constrained. On the one hand, this allows many inmates to cope relatively well in prison, since it makes it easier to decide how to act and provides structure for living. But it also means that learning which occurs in prison will not transfer easily to the outside world, where one must structure one's own life, conditions are more varied, choices are required, and the range of possible behaviors is greatly enlarged.

Thus, the special restrictions in prison have the effect of depriving inmates of experience with the conditions they must deal with on the outside. As a result, they cannot learn to cope with those conditions. We assume that individuals normally learn to cope with life from the

interaction of growth and experience, most likely in a way parallel to other aspects of development, with important changes in adolescence and early adulthood.

From the arguments above we see that imprisonment deprives people of the usual experience necessary for the development of coping, and in this way it freezes development at the point when a person enters the institution. Thus, we can see why the behavior of habitual offenders resembles that of adolescents in many ways, e.g., in the dependence on peer groups, emphasis on physical dominance, and generally impulsive behavioral style. It also follows that imprisonment at an early age will have more effect on subsequent behavior than at a later time, since that is when the greater development is normally occurring. Finally, we can also predict that those who have spent the most time in prison will be those who cope most poorly when they are on the outside.

Our reasoning here has the pregnant implication that imprisonment prevents individuals from learning to cope successfully. If prisons do not actively interfere with good coping, neither do they allow its development. When we consider in addition the coping-criminality hypothesis discussed above, with the expectation that inmates arrive in prison with inadequate coping ability, we are led to a very pessimistic appraisal of the possibilities in the present system. If we are correct, then our present prisons leave untouched the very problems which have resulted in offenders' undesirable behavior.

Only if prisons are made to simulate better the conditions of ordinary life can they help to correct the behavioral and cognitive problems which lead to crime. In our understanding, reform is equivalent to the relearning of old habits of thought and action, and effective learning requires clear contingencies, the freedom to choose among behaviors in order to learn to arrive at the best alternatives, and practice in a realistic environment like that in which one will be expected to perform later.

In essence this explanation says that prisons leave coping skills untouched, especially the skills needed to deal with situations occurring only outside of prison. One can then envision a recidivist cycle: individuals who cope poorly will be likely to commit offenses resulting in

their imprisonment, but this will ensure that they remain unable to cope with life on the outside until they are released, when they will cope poorly and thus be likely...ad infinitum. Thus, the convicted criminal can be caught in a trap, which will hold him in a cycle of recidivism until he becomes too old to struggle, too debilitated to be harmful, or some unusual event intervenes. Until one of these occurs, he will be caught in the cycle, and the worse his record the more surely is he trapped.

It is not possible to fully substantiate these arguments with the evidence we have now. A study of first offenders appears to be necessary, although it would be quite difficult as it needs to follow subjects longitudinally over several years. However, the implications of our present data are such a challenge to the entire prison system that further research is a clear necessity. Our results relating to previous imprisonment perhaps explain much of the failure of prisons to change the behavior of convicted criminals, and also provide a strong caution for the continued reliance on imprisonment as a technique for controlling crime.

As a last comment on the data, it should be reiterated that there were only very minimal differences according to institutions. The few effects which were statistically significant were scattered, unsystematically related to the level of custody, and generally trivial. Although our analyses partly confounded custody level with institutions in order to magnify the chances of significant differences, they replicate the lack of differences found by Porporino (1983) in comparing across medium-security institutions.

This result is entirely consistent with our theoretical view that environmental conditions are rather unimportant in determining a person's responses. Previous work has often focused exclusively on aspects of prison environments to explain behavior (cf., the literature on the environmental causes of prison violence). Clearly, this is incorrect: our data shows the fact, and our theory tells why.

Finally, an interesting area for discussion is the relationship of the patterns of behavior seen here to older constructs such as "prisonization" and "institutionalization". While there are some resemblances, we conclude that for the most part our results are only tangential to previous concepts (and vice versa). As should be apparent, we favor a rather molecular

description of behavior. Any global construct constructed in the absence of such analysis is bound to distort some aspects of the actual pattern of behavior. Thus, for example, descriptions of prisonization resemble some of the changes in socialization we measured at the second interview, but they do not fit the changes in the other direction seen later.

While they may have been originally based on some good observations, it is inevitable that global theories based on global generalizations will distort many aspects of the actuality of behavior. Moreover, there has been some real change in prison systems since research like Clemmer's (1940) and contemporary conditions are quite different from the descriptions in the older literature.

In addition, it is also clear from the results of several studies including the present one that many of the principal features of Goffman's (1961) overall description of institutionalization do not generalize well from his original population of inmates in mental institutions to a population of criminal offenders. If inmates do much that is maladaptive, they rarely cease to struggle, and few follow passively the demands of their institutions. If they did, many of their institutional problems which we saw in this study would not have occurred. Thus, in general, we would argue that the earlier global constructs are of minimal use in dealing with the reality of behavior in contemporary prisons.

Recommendations

Many aspects of this study have direct relevance for current policy and practice in the Canadian criminal justice system. In this section we will point out some of the implications, from the global to the minute in scope.

The above discussion has considered the arguments that the restrictions in prisons limit the development of coping among inmates. As a result, prisoners may be released to the outside no better than when they entered. Whatever the good intentions of both staff and inmates, this limitation leads us to predict that recidivism will inevitably be high. If it is correct, it explains much of the failure of previous rehabilitation programs, for in our view they have not dealt with the central problems.

Until now, attempts at rehabilitation have been based on the assumptions of deprivation models. Most prominently seen at present are a variety of vocational training and educational programs. It was certainly the case that unemployment was very high among our subjects before they were imprisoned; however, this was not generally because of a lack of vocational training. Rather, most of them had held jobs at various times, but were unable to cope with the demands of regular employment, e.g., regular work habits and some minimum of interpersonal skills. Time and again we heard from our subjects how they had walked out on jobs simply because they could not deal with demands from supervisors or coworkers, or how they were dismissed because of persistent absences, lateness or drunkenness.

Thus, we have little faith in the ultimate effects on recidivism of current programs. This is not to say that training and educational benefits are not necessary or valuable in themselves, but that they are based on a mistaken model of the causes of criminal behavior. By themselves, they may make little difference in the persistence of criminal behavior. Coping skills may be more important than job skills.

What changes would produce an improvement in the effectiveness of prisons? From the logic above, we would expect that almost anything which reduces the differences between prison and the outside world would be beneficial. At present, inmates experience a highly artificial environment in prison, quite divorced from what they will find when they are released. However, the real requirements of confinement do not require such a high degree of artificiality. The more closely the conditions of imprisonment can begin to approximate those normally seen on the outside, the better inmates can learn to survive without resort to criminal behavior.

From the discussion above, one can see that several sorts of changes are necessary to make prisons effective in retraining behavior. The first set of recommendations are aimed at improving the contingencies between an inmate's behavior and the outcomes which he experiences. For example, at present there is a very limited range of rewards which are available for working at jobs within the penitentiary. In most institutions, the

highest paid positions provide payment for little more than a few small supplements to basic necessities, while the necessities are given almost regardless of work. It takes months or years of steady work for an inmate to accumulate enough in his institutional account to purchase luxuries such as hobbycraft materials or a television set for his own use; yet, if he does little or nothing he will have almost as much. The contingencies between behavior and outcomes should be strengthened at both ends of the continuum, with higher rewards for good work and lower benefits for freeloading.

Moreover, many prison jobs are now undemanding and unsatisfying, designed either as time fillers or to provide low-level institutional services. Working times are also rigidly scheduled in timetables that have little latitude for extra work hours or variations in working times. Most inmates have considerable psychological investment in their work assignments, as our data show, since they represent the best means of self-improvement for the gleaners and also the best way of absorbing time in prison for all. If work assignments were made more meaningful, more realistic and more flexible, they would serve our aims of reducing the artificiality of the prison environments.

Similar changes in other areas are also possible. For example, institutional privileges ought to be made at least partly contingent on behavior which is appropriate on the outside, rather than simply on the absence of institutional offenses as at present. Ratings of work performance could be used: better than average work records, or extra efforts, could be counted to allow an inmate extra privileges. A wide variety of other desirable behaviors could also be used in the same way.

It is a paradox that penal institutions usually have fairly detailed and explicit rules specifying prohibited behaviors with the consequences of their occurrence, but there are not specifications or lists of prosocial behaviors to be encouraged. If the goal of changing offender behavior is to be taken seriously, then corrections must begin to specify what kinds of desirable behaviors inmates ought to acquire. For example,

inmates should be taught to plan their time and to anticipate the future. Meaningful and detailed plans should be formulated for use of time in prison and inmates should be rewarded consistently both for formulating plans and for meeting objectives.

To be effective, contingencies must be clearly visible, i.e., there is no point in formulating rules if they are not known. Therefore, the rules used in dispensing both rewards and punishments in penal institutions should be clearly formulated, published and freely available to inmates. Included should be specifications of the things that an inmate must do in order to obtain various rewards such as specific benefits, transfers, or release, and also the details of decision procedures. When an inmate is denied a privilege for which he has applied, he should be told what he must do in order to achieve his goal.

In summary, we recommend that institutional procedures be changed to allow inmates more control of the conditions they experience in prison. Contingencies should be strengthened, desirable behavior changes should be identified and encouraged, and the use of rewards for good behavior should be increased. If the present system is careful and reasonably just in its administration of punishments, it almost entirely ignores effective procedures for the use of rewards and for training new behaviors generally.

A second set of recommendations follows from our discussion above about the differences between prisons and the outside world. While we are arguing that the current regimes in prisons create a more artificial environment than necessary to meet the conditions of confinement, we recognize that there are bound to be some differences between the world in prison and that outside. Imprisonment by its nature requires that inmates will live apart from their families, live together in groups that would not otherwise exist, and suffer some restrictions of choice. One must therefore design procedures to allow prisoners to adjust their behaviors to those required for successful adjustment after their release.

If all prisons are to some degree an artificial environment, some are clearly more artificial than others. In particular, the conditions in institutions of higher security levels are obviously more unlike those in the external world than conditions in institutions at the other end of the

security continuum. Therefore, we recommend that placement criteria be examined so that more use is made of minimum-security prisons. Transfers to lower security should be included in the list of positive rewards for good behavior discussed above, with the required behaviors for their being granted clearly spelled out. Release directly from maximum-security institutions should be avoided whenever possible.

In addition, the transition to the outside world can be minimized in other ways. Halfway houses and gradual release programs are probably the best means of allowing an inmate to learn how to survive lawfully on the outside. They should be used in almost all cases. At present, these types of programs are restricted to the inmates who show the best behavior while in prison, i.e., those who cope best. This is the opposite of what should be done, for those inmates who have the greatest difficulty in adapting are those most in need of help. Thus, graduated release schemes should be available for almost all inmates, rather than a small minority, as at present. If necessary, separate programs should be available to those with poor institutional records, with extra help provided.

It should be pointed out that the changes envisioned in the two sets of recommendations immediately above will not make demands for new resources. In fact, they will likely reduce costs, since maximum-security prisons are far more costly than minimum-security institutions. In addition, these recommendations may be helpful in relieving the overcrowding which is an increasing problem in higher-security prisons.

Once they are released, inmates need help and guidance in adapting to the conditions they face. It is recommended that parole services be increased and that their emphasis be changed from monitoring and supervising ex-prisoners to retraining and guidance. Even if inmates are given training in coping skills while in prison they will need further guidance after release. Although this change does not necessitate extra resources, there will be a need for some extra training for parole officers, supervisors of halfway houses, etc.

Changing the prison system in the ways specified ought to make it more effective in changing the behavior of offenders. In general, we envision a "rationalized correctional environment" similar in many ways to Toch's call for a "humanized correctional environment". Admittedly, we

are asking for some fundamental changes in basic policies. However, the changes ought not to disrupt the demands of security and control within the prison, and the potential benefits justify the effort involved. In fact, we would expect that inmates in a rationalized system will present less in the way of disciplinary and management problems that one finds at present. Such experiments as the Pilot Program at Joyceville Institution show that some conditions in prison can be made more like those on the outside, with subsequent benefits of reduced management problems, and probably lowered recidivism as well.

We would expect that the present study would be reinforced by additional data before major general changes are undertaken. However, small-scale experiments seem justified even now, and we certainly recommend that they be attempted. As a beginning, one institution should be chosen for a pilot project, with the expanded codes of conduct, altered release procedures, and augmented training programs outlined here. Varying security levels could be assigned to different ranges to make the single prison into a model of the larger system. The entire operation should be continuously subject to careful evaluation procedures, with outside monitoring to ensure that procedures are working according to their aims.

The above recommendations are general and mostly require modifications across the penal system, in order to make it begin to work to actually change offenders' behavior. In addition, other recommendations follow from specific aspects of our findings, and these concern more localized aspects of the system.

The first of these is that training programs should be instituted to increase inmates' coping abilities. These should be available to all inmates, and perhaps required for many and included in their term plans. It should be emphasized that these programs would differ from any sort of program currently available, e.g., life-skills training. They would include training in ways of analyzing problem situations, formulating effective strategies for changing problems, and evaluating possible

responses. Thus, there would be training in such techniques as cognitive restructuring, problem-solving, covert responding, the use of anticipation, etc. An experimental program should be begun at the earliest possible time.

In addition, we have demonstrated that there is a very pressing need for treatment programs for alcohol and drug problems among inmates. A majority of prisoners have serious problems which require treatment; yet, current programs are minimal or non-existent. Our theoretical position emphasizes the major role of maladaptive responses shown by convicted criminals. We recommend that alcoholism treatment programs be implemented as soon as possible. The best programs are probably those using a variety of behavioral techniques aimed at producing abstinence, but if necessary several programs should be tried to find which is most effective in the penitentiary setting.

We presume that both coping and alcoholism programs would be administered by institutional psychologists. However, given the present shortage of available psychologists in most institutions, there will likely be a need to increase the number. Despite the cost, such action would almost certainly be very cost-effective, considering that it is aimed at the prevention of recidivism. In addition, these new programs may require some extra training for current personnel.

Several other recommended changes concern the treatment of long-term inmates. Our results show that sentence length does not predict any important measure of adaptation in prison, from disciplinary history to depression. Therefore, there is no need for long-term inmates to be assigned to maximum-security institutions in every case. If it is desired to minimize risk from those inmates who present potential problems, then previous prison and criminal background, along with coping behavior, allow good prediction. If good information on coping behavior is not routinely available for individuals entering the system, criminal records are present and should be used for the initial assignments.

Similarly, transfers to lower-security institutions and access to vocational training programs should be as easily available to long-term inmates as to others. Even if their terms are bound to be long, there is

no demonstrable basis for the current policy which requires them to "prove" themselves before they are allowed opportunities equal to those of other inmates. If they are given the chance to better their conditions more easily, the development of the pattern of psychological isolation seen at our final interview might be dampened.

It has been known for several years that the harsh life sentences created as a tradeoff when the death penalty was abolished would lead to a large accumulation of life-sentence prisoners. Certainly, the penitentiary system has been very conservative in its treatment of these prisoners, using mostly old policies developed when the number of lifers was small and the actual time served on a life sentence was considerably less than 25 year. Alternatives should be explored, e.g., locating lifers in special ranges of their own where they can be held under relatively advantageous conditions within a secure institution.

Several other specific recommendations follow from the data of the present study. One of these concerns the timing of treatment programs. At present, there is really no policy which directs when treatment will be attempted, except in isolated cases such as the treatment of sex offenders. Indeed, there is often a tendency for psychologists and other treatment staff to "wait until the inmate settles down". However, our data show that in many inmates there is a real desire for change at the beginning of the term, which is dissipated with the passage of several months.

We recommend that active treatment programs be initiated immediately whenever possible, rather than later in the term when behavior patterns have become fixed. The window of opportunity seen in our data ought not to be lost. Implementation of this change should not change the amount of resources needed for treatment, but only the timing; we would expect that an increase in the efficacy of treatment would result.

Next, there are two simple recommendations based on aspects of our data. The first is that inmates be routinely administered tests for clinical levels of emotional problems at the onset of their terms. These

ought to include the Beck Depression Inventory, and the Spielberger State Anxiety Index, or other equivalent instruments to measure specific symptoms of acute stress. As was seen in the results, many inmates had particular emotional problems in their first few months, and routine testing would identify those at risk and help to direct treatment where it is needed. The tests specified are simple, and can be administered by a clerk in under 10 minutes; they can be used in addition to the testing procedures currently employed, or they can replace some of the personality tests currently administered which are of doubtful usefulness in any case.

The penultimate recommendation follows from our assessment of problems which inmates experience. It was clear that many of the inmates we spoke to were sensitive to the quality of medical care they received. Despite the advances that have been made in recent years, there were complaints about the availability and continuity of medical care. It would seem important to determine more specifically why these perceptions prevail.

Finally, there is the inevitable recommendation that must accompany any research study, viz., the call for more research. In this case we believe that further work is justified by the success of the investigation reported here, and by the potential it offers for directing meaningful changes in the criminal justice system. Specifically, several further studies should be attempted, some of them described above. Among them are: 1) a follow-up to the present study which looks at further changes in the long-term subjects included here; 2) an investigation of coping behavior among prisoners about to be released, with a focus on the prediction of recidivism; 3) a study of coping ability and associated behaviors by parolees after their release, possibly including a pilot treatment program; and 4) work with juveniles, looking at how they deal with problems, again possibly including some treatment component. Once the results from these are available, a comprehensive appraisal of the usefulness of the present approach will be possible.

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APPENDIX C

Information and Consent Forms
and letters to subjects

COPING BEHAVIOUR PROJECT

Information Form

This sheet is intended to tell you about a study of inmate behaviour in which we would like your cooperation. The study is aimed at finding out how people in prisons cope with their environment. It is being done by employees of the Department of Psychology at Queen's University, under the direction of Dr. Edward Zamble. It is being paid for by a contract with the Research Division of the Department of the Solicitor General.

In this study we will interview inmates as soon as possible after they come to the institution to which they are assigned. We will select the inmates to interview randomly, that is, according to chance. However, long-term inmates have a greater chance of being selected, since we especially want to find out about the effects of long-term imprisonment. The inmates selected will be asked about their behaviour and experiences in and out of prison, and we will also ask them to fill out some questionnaires about the same things. We would also like to use some data which is available in their inmate files. Later, we will interview them again, to see what changes occur over time.

The purpose of the study is to get information on how prisons affect people. This could be used later in deciding how to improve the system. So, if you agree to cooperate, you will be helping us, and maybe also helping your fellow inmates. At the same time, we must tell you that we are only collecting information, so, if you have any problems now, we cannot change anything for you, nor can we offer therapy. For those things, you will have to go through normal channels.

The results of the study will be included in a report to the sponsoring agency. All or part of the results will also be published separately in scientific journals, where they will be freely available for anyone to read. However, if you agree to participate, we will try to provide you with a copy of the summary of the results when we are finished. It would help if you would give us an address where you want it sent (in three years time).

All answers that inmates give will be strictly confidential, and they will be coded for all reports in such a way that no individual's answers can be identified. This confidentiality is guaranteed by the Canadian Human Rights Act, and we will also give our personal guarantees that it is respected. Also, the data will be used only for research purposes; if anyone ever wants to use them for any other purpose, we will require your written permission before we release any information.

We would appreciate your cooperation in this study. If you have any questions now, please feel free to ask them. If you have any questions or problems about the study later, you can get in touch with

Dr. Edward Zamble
Department of Psychology
Queen's University
Kingston, Ontario
K7L 3N6

We are interested in your reactions and we will try to answer all inquiries.

If you have any complaints, please direct them to

Dr. Peter Dodwell
Head
Department of Psychology
Queen's University
Kingston, Ontario
K7L 3N6

COPING BEHAVIOUR PROJECT

Consent Form

I, _____ (Name) have been asked to take part in a study of inmate behaviour. I have been given an "Information Form" describing the study, which is being done in the Department of Psychology at Queen's University under the direction of Dr. Edward Zamble.

I agree to take part in this study, and to be interviewed about my experiences in and out of prison. I will try to answer questions to the best of my memory, but I understand that my taking part in this study is purely voluntary, and that I am free to refuse to answer specific questions; I may also withdraw from the study if I feel it necessary. My participation in this study will not count for or against me in any way.

After the interview I will be asked to fill out some questionnaires about my behaviour and experiences, and I also agree to do this. I will also be asked for a further interview in about three months time, and again a year later, to see how I am getting along at those times. I also agree to allow these researchers to obtain additional information from my institutional and medical files.

Any information I give will be strictly confidential. Nothing I say will affect my position here in any way. The information I give will be used for scientific purposes, in order to better understand how imprisonment affects people. My answers will be coded in such a way that I cannot be identified in any report of the results.

My signature below indicates that I have read the above, and that I agree to take part and give my consent to the researchers having access to my institutional and medical files. The interviewer will also sign to guarantee the conditions stated above.

_____ date _____ inmate's signature

_____ date _____ interviewer's signature

To help us send your copy of our summary report, please give an address below where it is likely you can be reached in three years.



DEPARTMENT OF PSYCHOLOGY

Queen's University
Kingston, Canada
K7L 3N6

Dear Mr.

We are sending this letter to you as a participant in our research project on "coping behavior in prison inmates". Since we have already completed two interviews with you, you probably know that a third interview is scheduled for one year after the second.

We are finding now that some of our subjects are being released on parole (either full parole or day-parole). Now we think that this is really good, and we would like to see as many of our subjects as possible getting parole. However, we can't do the third interview after you leave the penitentiary.

Also, some of our subjects are being transferred out of the province. This makes it pretty difficult for us to get to see them.

So what we would like is for you to tell us as soon as possible if you have a parole hearing scheduled, or if you have been told that you will be transferred out of the Ontario region soon. Enclosed is a form for you to send, with a self-addressed enveloped. You probably won't need to use it, but please keep it. If you are likely to be released or transferred before the third interview, please fill out the form and send it off. After that, we will try to find out when you are leaving, and come right away for the third interview if necessary.

We realise that probably only a few people will need to use this form, but the complete participation of each of our subjects is really important for the success of our project. Thank you for your help. We look forward to seeing you again for the third interview.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Ed Zamble".

Edward Zamble
Julia Kalotay

PRISON COPING PROJECT
DEPARTMENT OF PSYCHOLOGY
QUEEN'S UNIVERSITY

PAROLE HEARING OR TRANSFER INFORMATION FORM

1. I am applying for a parole and I have been told that my application
will be heard on _____ (fill in date).
2. I have been told that I will be transferred to _____
(fill in name of institution - out of province only).

NAME (PLEASE PRINT) _____

DATE OF SENDING _____

(Send this form in the self-addressed envelope provided. If you have lost
the envelope you can send it through the institutional mail (no stamp)
to:

Dr. Edward Zamble
Prison Coping Project
Department of Psychology
Queen's University
c/o Institutional Psychology Department



DEPARTMENT OF PSYCHOLOGY

Queen's University
Kingston, Canada
K7L 3N6

May, 1984

To all subjects in our investigation of coping:

It has been almost a year since we saw the last of you to complete our interviews, and for some of you it has been so long that you might have forgotten about us (although we hope not).

Although we started the main part of the study in the fall of 1980, it took over a year to find and interview enough subjects (even though almost everyone we approached agreed to participate). It then took more than another year until we were finished interviewing, since we wanted to see each subject several times to find out what changed over time. After we had all the data by the middle of last summer, we spent six months analysing it and writing up the results for a final report.

When you agreed to take part in our study, we promised to send you a summary of our findings. At the beginning of the year, we expected that by now you would have had copies of the summary. However, we've been delayed with some minor revisions and the final report hasn't yet been accepted by the sponsoring agency.

So we are writing to tell you that we haven't forgotten you and that we would like to send you a copy of the summary as soon as it is accepted and copies are printed, probably some time this summer. The full report will be several hundred pages long so we can't send out copies, but if you want to read it we will have copies sent to the libraries of each institution; also, we hope that the results will be published in a book some time soon.

Finally, we want to take the opportunity to thank each of you again for your participation. If we have found anything of value (and we think we have) it is largely owing to the willing cooperation and honest answers we received from our subjects. If we aren't in a position to help any of you individually, we hope that the results of our work can benefit others in the future. We will miss the chance to get to talk with you, but some of you may be around for a while longer, and perhaps we might even get the chance to return to see you again.

Sincerely yours,

Edward Zamble

Edward Zamble,
Associate Professor.

Julia Kalotay

Julia Kalotay,
Research Associate.

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APPENDIX D:

Rating Scales

Coping Rating Scales

1. Benefits

(For this scale, the entire set of responses for a single problem should be rated. Responses for different problems will have different ratings. Rate in terms of the overall probable benefits of a response set toward the relief of emotional distress, and/or removal or remediation of the problem situation.)

Description	Score
An optimal response: Long-term and general remediation of problem situation and/or relief of emotional distress is likely.	5
Generally effective: May provide some long-term partial remediation or relief, or short term general remediation or relief; however, improvement is possible.	4
Some usefulness: Short-term and partial remediation or relief is likely; response has substantial limitations.	3
Ineffective action: Some action is apparent, but very little remediation or relief is likely.	2
None: Either no action, or action has no likely remediation or relief.	1

2. Risks or Costs

(For this scale, the entire set of responses for a single problem should be rated. Responses for different problems will have different ratings. Rate in terms of the overall probable negative consequences of a response set, in increasing either emotional distress or the size or seriousness of the problem situation.)

Description	Score
None	4
Minor risk or cost: Short-term minor exacerbation.	3
Major risk or cost: Short-term major exacerbation or long-term minor exacerbation.	2
Extreme risk or cost: Long-term and major exacerbation; catastrophic.	1

Coping Modes

(The entire set of responses for a problem is rated together, according to whether or not there is evidence of the use of each of the following categories. Since an overall index is usually desired, the results may be combined across problems, according to whether or not each mode was used at all within a subject's set of responses.)

1. Anticipatory Problem-Oriented: Explicit recognition of nature of problem situation; systematic, organized and persistent attempts to resolve situation; evidence of planning and anticipation of future results of actions.
2. Cognitive Re-evaluation: Changes in appraisal or perception of situation to reduce perceived threat.
3. Cognitive Self-Control: Use of self-control techniques to reduce, redirect, or otherwise alter emotional response to problem situation, thus reducing threat.
4. Substitute: Deliberate choice of behaviors which are incompatible with occurrence of problem situation, generally using strategy of filling time.
5. Avoidance: Staying away from situation in which problem occurs, or avoidance of thoughts about it.
6. Escape: Physical removal of self from problem situation, or termination of thoughts about it.
7. Social Support: Use of others for comfort, reassurance, or sharing problem by self-disclosure.
8. Drug-taking: Ingestion of alcohol or other drugs for purpose of relieving emotional distress or to dull awareness of problem.

9. Palliative: Using responses which reduce emotional distress from problem situation, most commonly by providing some contrasting pleasant events (other than categories 7 or 8).
10. Reactive Problem-Oriented: Attempts to deal with problem situation, but lacking evidence of persistence, planning, organization, or anticipation of future results.
11. None: Subject did not cope at all with problem; says that nothing could be done, or that he was unable to act.

APPENDIX E:

Detailed descriptions of variables

Measures and Derived Variables

Most of the measures which were used in this study are straightforward, and they are readily understandable from the variable names.

However, it is also the case that measures of even the simplest things are often influenced by the exact manner in which they are obtained. So, for example, if one asks a subject "How many years of school do you have?" he may answer with the total number of years he attended school, or the highest grade he successfully completed, or the highest educational level he has obtained since leaving school; or he may even give just the age of leaving school, leaving the interviewer to clarify the answer or translate it into the desired metric.

For these reasons, this study was preceded by several months of exploratory work, during which the questions in the interview were tested to ensure that the answers they obtained were reasonably reliable and consistent with our aims in including them. Therefore, the reader is referred to the interview protocols, also in this Appendix, for the exact forms of all inquiries. The wordings stated were usually adhered to, with departures only to follow up on particular answers for detail or clarification, or to allow a smooth flow of conversation in the interview.

In addition to the many variables which are defined by their respective interview questions, others were obtained from files. Also, many items were combined or manipulated in other ways to yield summary or derived variables; these latter variables were usually the ones actually included in the analyses reported.

The purpose of this section is to give the details of derived and secondary measures, to answer any questions about their definitions or proper interpretations. The reader should also consult the section which describes the scales used in rating coping behavior, included elsewhere. Items described here are listed according to their order in the list of basic variables, included in the chapter on Method.

I. Background

"Father's occupation" was obtained from the subject, and coded into the following categories: 1) None; 2) Laborer or unskilled; 3) Semi-skilled or sales; 4) Skilled trade or independent businessman; 5) Professional, executive or managerial.

"Social class" was rated from file information into one of three classes: 1) Middle class; 2) Working class; 3) Lower or poverty class. Given the limited detail available, any division finer than this would have been very unreliable. It should be noted that the original ordering was in descending sequence; therefore, in all analyses the signs of correlations involving this variable were reversed, in order that increased values would correspond with higher social classes.

"Family type" was rated from file data to describe the family in which the subject lived during the early school years (ages 6 to 11). The categories were: 1) Intact nuclear; 2) Broken nuclear; 3) Non-nuclear blood relatives or formal adoptive; 4) Foster parents; 5) Institutional.

"Marital status" was coded as follows, from interview information as to the subject's status during the period before arrest: 1) Married, legally or common-law; 2) Not married but having a current relationship with a woman; 3) Not married, no current relationships, but had serious relationships or was married in the past; 4) No current or past serious relationships, but has or has had casual female relationships; 5) Never any relationships, serious or casual.

"Job training" was coded from interview data, using the same categories as for "Father's Occupation", above.

"Age of first recorded behavior problems" was obtained from files when available, and included delinquency, school problems, emotional disorders or other evidence of adjustment problems.

"Juvenile record" was a binomial variable indicating whether such a record existed, based on file information; when the file did not indicate clearly the presence or absence of a record, no score was entered.

"Age at first FPS entry" was defined as the first entry on the official criminal record maintained by the RCMP, regardless of disposition.

"Total number of convictions" counted charges for which convictions were recorded on the FPS record. (The record conveniently segregates

dismissed charges from those which resulted in convictions.) Where there were several counts of a single type of offense dealt with at the same time, they were recorded as a single conviction. This variable did not take into account the seriousness of offenses, but only the quantity.

"Total previous prison" was the sum of previous reformatory and penitentiary times. Where the time served differed from sentence times, we used the former. As explained in the text, this measure was gathered from both interviews and file data, but the interview data were used.

Imprisonment during the current term was not counted in the total.

"Proportion of previous life in prison" was calculated by dividing the value for the previous measure by the number of years the subject might possibly have been imprisoned. The latter was defined as his age minus 16. Thus, this variable measured the proportion of adult life which had been lived in prison.

"Visible tattoos" was a binomial variable taken from information on inmate record cards maintained by institutions.

"Reception centre or direct placement" recorded whether the subject had originally been sent to a Regional Reception Centre or assigned directly to one of the penitentiaries in the region. The change in the method of assignment occurred in the middle of the study, and was therefore confounded with sentence length groups. Fortunately, this variable seemed to have no statistical relationships with anything of any importance in the study.

"Offense type" was recorded for the single most serious offense on which the current sentence was based, taken from institutional files. Categories were as follows: 1) Murder or manslaughter; 2) Assault or wounding; 3) Sex offenses excluding rape; 4) Armed robbery; 5) Property offenses or theft; 6) Fraud and similar offenses; 7) Narcotics and drugs; 8) Other. In many analyses these offenses were recoded as either violent (categories 1, 2, and 4) or nonviolent (all others).

"Sentence length" measures the total aggregate sentence at the first interview. For purposes of original classification the inmate self reports were used; for later analyses, institutional records were available, and they were used instead. The two measures differed in less than 10% of the cases, in almost all cases by very minor amounts.

II. Coping process

"Coping Modes Index" was calculated from the set of coping modes for a subject in each interview, as follows: category 1 was assigned a value of 4; categories 2, 3 or 4 were given scores of 3; categories 5 to 9 were valued at 2; category 10 was given a value of 1. The value of the Index was that of highest-scoring category used. However, if category 11 (None) was used, the value of the Index was 0. Descriptions of the categories are given elsewhere in the Appendix.

"Previous psychological problems" was a binomial variable based on interview information.

"Suicide index" was calculated from interview information using the following categories: 1) No indications of suicidal behavior; 2) Thoughts of suicide, but never considered means (thus, casual consideration only); 3) Considered means of suicide (thus, more serious consideration); 4) Attempted suicide.

"Number of drugs index" counted the total number of drugs which the subject admitted to having used in our Drug Inventory; the figure included alcohol, cannabis, and 8 other types of drugs listed in the text. This index recorded a value if a given drug had ever been used, regardless of frequency.

"Drug frequency index" provided a measure of the amount of drug usage on the outside. Frequencies of use for each of the 10 categories of drugs (see above) were defined as the average number of days per month during which a drug was used, regardless of the amount. For conversion, a month was equated to 4 weeks or 28 days. For the overall index the 10 individual frequencies were added together, with a resultant possible range of from 0 to 280.

"Alcohol abuse index" measures the number of days per month during which a subject's intake was at least 6 units of alcohol on the outside. To equate different beverages, a unit was defined as one ounce of spirits, one 5-ounce glass of wine, or one 12-ounce bottle of beer, since these contain roughly the same amount of absolute alcohol. Information was taken from the Drug Inventory. The criterion of 6 units was taken from World Health Organization guidelines for defining alcohol abuse; prolonged usage

at this level will produce serious permanent organic damage.

"Problems in prior prison term" was taken from institutional file forms, which provide an explicit place for recording such information; it was a binomial variable. No entry was made for subjects who had not been previously imprisoned.

"Time in current residence" was taken from the interview question which asked the subject to specify how long he had been in his current living arrangement before his arrest.

"Control thoughts" used interview data, and was coded as follows: 1) Just let things happen, don't think about them at all; 2) Try not to think about things that are happening; 3) Try to think about things.

"Frequency of daydreams" was coded according a 5-point scale, which subjects were asked to use in answering the respective interview question: 1) All the time; 2) Most of the time; 3) Sometimes; 4) Rarely; 5) Never. In order to make positive correlations indicate a link with increased frequencies of daydreaming, the signs of all correlations are reversed for reporting in the text.

"Where get help for problems" was coded as follows: 1) Self; 2) Spouse; 3) Other family; 4) Friend; 5) Professional. When this showed no interesting relationships with other variables, it was reanalysed with categories 2-4 combined.

"General plan for doing time" was coded binomially according to the subject's interview answer.

"Future plans" were coded according to the realism and detail in the plans specified in the interview as follows: 1) Clear and realistic plans; 2) Clear but unrealistic; 3) Unclear; 4) No plans 5) Not ratable. It appeared that this question needed to be subdivided into plans for inside prison and those for after release, so this was done for the following items.

Outcomes

"Institutional moves index" was a measure of subjects' movements during the study, according to changes in level of custody. Each transfer to an institution of higher-level custody added a value of one to the score, while transfers to lower custody levels subtracted one. Movements to institutions at the same level were not counted.

"Discipline index" is an overall measure of disciplinary punishment. It was produced by adding together normalized scores for the number of days of lost privileges, punitive dissociation (solitary confinement) and lost remission. Data were of course taken from institutional files. If an inmate had been absent from the penitentiary system for periods of more than two weeks, the totals of the component variables were corrected to estimate amounts for the full period.

"Level of custody" had three values: 1) Minimum; 2) Medium; 3) Maximum. The inmate was assigned the value of the institution in which he was interviewed. Those in Protective Custody in Kingston Penitentiary were considered a separate class, although it is classified as maximum security by the penitentiary system.

"Number of initiations" counted the total number of times the inmate had come for medical attention, regardless of the type of problem. It counted both new and continuing complaints. However, when a series of treatments for a single condition were prescribed, the subject's appearances for subsequent treatments were not counted as separate initiations.

"Number of general somatic complaints" was a subset of the above. Each complaint for which the subject had sought medical attention was classified as either somatic, stress-related, or accidental. Complaints which are not ordinarily occasions for medical treatment, e.g., requests for dandruff shampoo, special diets or dental work, were excepted, even if they were dealt with by medical personnel in the penitentiaries. This variable is thus the total number of medical complaints minus those which were attributable to stress or accidents. If a condition required referrals or a course of treatments it was still counted as one complaint; however, if a chronic problem was repeatedly brought for attention, each occasion for complaint was counted separately. When a set of diverse

symptoms was brought for attention at the same time, it was ordinarily considered a single complaint. The period which was monitored was from the physical examination at the beginning of the term to the date of the final interview. As with disciplinary infractions, totals were corrected for prolonged absence from the penitentiary system before statistical analyses.

"Number of stress-related complaints" includes all medical complaints which would ordinarily be produced or exacerbated by the effects of stress. This includes not only the obvious effects of tension (feelings of tension, anxiety, depression, etc.) but also most other complaints not diagnosed as organic in cause. Thus, complaints of sleep disturbances, headaches, gastrointestinal problems, chest pains, rashes and dizziness were counted as stress-related unless a contradictory diagnosis was made. Chronic conditions which originally may have been related to stress, but which were established before the beginning of the term (e.g., ulcers or hypertension) were counted in the general somatic category unless they became acutely worse during the research period.

"Number of days on stress-related medications" was calculated using the above. Medications prescribed as the result of stress-related complaints were identified from the files, and we calculated the total number of days on which a subject had taken any. Each day on medication was counted as one, regardless of the number of different drugs taken. If a prescribed medication was not claimed by the inmate, it was not counted. In practice, drugs counted in this category included hypnotics, headache remedies and other analgesics, a variety of remedies for specific symptoms, and psychotropics.

"Number of days on psychotropic medications" was calculated similarly, but only those medications with generally accepted psychotropic effects were counted. This included tranquilizers, antidepressants and anti-anxiolytic agents. In cases of questionable classification a physician who worked in one of the institutions was consulted.

"Total injuries" was the number of new injuries brought for treatment. We also made an attempt to subdivide injuries into subcategories, viz., accidental, self-inflicted and assaults, but this could not be done accurately from the records, as many injuries of the latter two types were not correctly identified.

"Sleep problems" was a binomial variable taken from the subject's answer to the relevant interview question.

"Frequency of anger (guilt, loneliness, boredom)" were taken from the subject's estimate in the interview. In order to correct for response biases, the total number of dysphoric emotions (depression, anxiety, anger, guilt) were added together, and the frequencies of the components were recalculated as proportions of the total. In most analyses the self-reports of depression and anxiety were not used, since these were better measured by questionnaires. Frequencies for loneliness and boredom were not corrected, since it was felt that these may be somewhat different than the other states counted.

Additional variables

All questionnaires not listed above were scaled according to previously published standardizations.

Ratings of responses obtained in the coping analysis sections of interviews were done as specified in the Method; details of the scales are included elsewhere in the Appendix.

Other items not defined here should be interpretable from their titles, but interview protocols should be consulted.